CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1878274 **Master Contract:** 203213

Project: 1878274 **Date Issued:** 2007/03/30

Issued to: **Fronius International GmbH**

Guenter Fronius Strasse 1
Wels-Thalheim, 4600
Austria
Attention: Mr. Josef Feichtinger

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US'

C US

Issued by: Ernesto Lopez, AScT

Authorized by: Lindsay Clark, Product Group Manager

PRODUCTS

CLASS 5311 09 - POWER SUPPLIES - Distributed Generation Power Systems Equipment
CLASS 5311 89 - POWER SUPPLIES - Distributed Generation - Power Systems Equipment
- Certified to U.S. Standards

PART A:

Utility Interactive Inverter, Models IG 2000 NEG, IG 2000 POS, IG 3000 NEG, IG 3000 POS, IG 2500-LV NEG, and IG 2500-LV POS, permanently connected. The following system ratings are for Models IG 2000, IG 3000 and IG 2500-LV, unless otherwise indicated:

INPUT RATINGS:

The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards, for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, i.e. National Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.

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Maximum input voltage: 500 V

Range of input operating voltage: 150-450 V

Maximum input current (ac or dc): 13.6 A (IG 2000), 18.0 A (IG 3000), 16.9 A (IG 2500-LV)

Maximum input short circuit current: 25.0 A

Maximum input source backfeed current to input source: 0

OUTPUT RATINGS:

Output power factor rating: 1

Operating voltage range (ac) (L-L): 215-260 V (IG 2000, IG 3000), 185-225 V (IG 2500-LV)

Operating frequency range or single frequency: 59.3-60.5 Hz

Number of phases: 1

Nominal output voltage (ac): 240 V (IG 2000, IG 3000), 208 V (IG 2500-LV)

Normal output frequency: 60 Hz

Maximum continuous output current (ac): 8.35 A (IG 2000), 11.25 A (IG 3000, IG 2500-LV)

Maximum continuous output power (ac) (@40ºC): 1.80 KW (IG 2000), 2.50 KW (IG 3000), 2.15 KW (IG 2500-LV)

Maximum continuous output power (ac) (@50ºC): 1.80 KW (IG 2000), 2.00 KW (IG 3000, IG 2500-LV)

Maximum output overcurrent protection: 20 A

Utility interconnection voltage and frequency trip limits and trip times: See Note 1 below.

Trip limit and trip time accuracy - Voltage: +/- 1.5 %; Frequency: +/- 0.02 Hz

Normal operation temperature range: -20ºC - +50ºC

Output power temperature derating and maximum full power operating ambient: See Maximum Continuous Output Power

Enclosure Rating Type: 3R

Notes:

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1. Utility Interconnection Default Voltage and Frequency Trip Limits and Trip Times: Voltage and frequency limits for utility Interaction.

Simulated utility source - Voltage (V): Condition (A) < 0.50 Vnor; (B) 0.50 Vnor ≤ V < 0.88 Vnor; (C) 1.10 Vnor < V < 1.20 Vnor; (D) 1.20 Vnor ≤ V; (E) Rated; (F) Rated; (G) Rated

Simulated utility source - Frequency (Hz): Condition (A) Rated; (B) Rated; (C) Rated; (D) Rated; (E) f > 60.5; (F) f < (59.8 – 57.0) (Adjustable Set Point); (G) f < 57.0

Maximum time (sec) at 60 Hz before cessation of current to the simulated utility: Condition (A) 0.16; (B) 2; (C) 1; (D) 0.16; (E) 0.16; (F) 0.16; (G) 0.16

2. Utility interactive evaluations were conducted with the following firmware:

Device: Software Version

Main Controller Microprocessor: 2.09.00

Power Board (DSP): 2.03.01

GFDI Board: 1.00.00

PART B:

Utility Interactive Inverter, Models IG 4000 NEG, IG 4000 POS, IG 5100 NEG, IG 5100 POS, IG 4500-LV NEG, and IG 4500-LV POS, permanently connected. The following system ratings are for Models IG 4000, IG 5100 and IG 4500-LV, unless otherwise indicated:

INPUT RATINGS:

Maximum input voltage: 500 V

Range of input operating voltage: 150-450 V

Maximum input current (ac or dc): 26.1 A (IG 4000), 33.2 A (IG 5100), 29.3 A (IG 4500-LV)

Maximum input short circuit current: 40.0 A

Maximum input source backfeed current to input source: 0

OUTPUT RATINGS:

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Output power factor rating: 1

Operating voltage range (ac) (L-L): 215-260 V (IG 4000, IG 5100), 185-225 V (IG 4500-LV)

Operating frequency range or single frequency: 59.3-60.5 Hz

Number of phases: 1

Nominal output voltage (ac): 240 V (IG 4000, IG 5100), 208 V (IG 4500-LV)

Normal output frequency: 60 Hz

Maximum continuous output current (ac): 16.7 A (IG 4000), 21.3 A (IG 5100), 21.6 A (IG 4500-LV)

Maximum continuous output power (ac) (@40ºC): 4.00 KW (IG 4000), 5.1 KW (IG 5100), 4.50 KW (IG 4500-LV)

Maximum continuous output power (ac) (@50ºC): 4.00 KW (IG 4000), 4.2 KW (IG 5100, IG 4500-LV)

Maximum output overcurrent protection: 30 A

Utility interconnection voltage and frequency trip limits and trip times: See Note 1 below.

Trip limit and trip time accuracy - Voltage: +/- 1.5 %; Frequency: +/- 0.02 Hz

Normal operation temperature range: -20ºC - +50ºC

Output power temperature derating and maximum full power operating ambient:

Maximum Continuous Output Power (AC) @ 25ºC, 150 VDC Input): 2.96 KW

Maximum Continuous Output Power (AC) @ 50ºC, 150 VDC Input): 2.94 KW

Maximum Continuous Output Power (AC) @ 25ºC, 163 VDC Input): 4.0 KW (IG 4000), 5.1 KW (IG 5100), 4.5 KW (IG 4500-LV)

Maximum Continuous Output Power (AC) @ 40ºC, 163 VDC Input): 4.0 KW (IG 4000), 4.71 KW (IG 5100), 4.5 KW (IG 4500-LV)

Maximum Continuous Output Power (AC) @ 50ºC, 163 VDC Input): 3.74 KW

Maximum Continuous Output Power (AC) @ 25ºC, 450 VDC Input): 4.0 KW (IG 4000), 5.1 KW (IG 5100), 4.5 KW (IG 4500-LV)

Maximum Continuous Output Power (AC) @ 50ºC, 450 VDC Input): 3.63 KW

Enclosure Rating Type: 3R

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Notes:

1. Utility Interconnection Default Voltage and Frequency Trip Limits and Trip Times: Voltage and frequency limits for utility Interaction

Simulated utility source - Voltage (V): Condition (A) < 0.50 Vnor; (B) 0.50 Vnor ≤ V < 0.88 Vnor; (C) 1.10 Vnor < V < 1.20 Vnor; (D) 1.20 Vnor ≤ V; (E) Rated; (F) Rated; (G) Rated

Simulated utility source - Frequency (Hz): Condition (A) Rated; (B) Rated; (C) Rated; (D) Rated; (E) f > 60.5; (F) f < (59.8 – 57.0) (Adjustable Set Point); (G) f < 57.0

Maximum time (sec) at 60 Hz before cessation of current to the simulated utility: Condition (A) 0.16; (B) 2; (C) 1; (D) 0.16; (E) 0.16; (F) 0.16; (G) 0.16

2. Utility interactive evaluations were conducted with the following firmware:

Device: Device Version

Main Controller Microprocessor: 2.09.00

Power Board (DSP): 2.03.01

GFDI Board: 1.00.00

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-M91 - General Requirements - Canadian Electrical Code - Part II

CAN/CSA-C22.2 No. 0.4-04 - Bonding of Electrical Equipment

CAN/CSA-C22.2 No. 107.1-01 - General Use Power Supplies

UL Std No. 1741-First Edition - Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems (Including Revisions through and including November 7, 2005)

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Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
1878274	2007/03/30	Utility Interactive Inverters, Models IG 2000 NEG, IG 2000 POS, IG 3000 NEG, IG 3000 POS, IG 2500-LV NEG, IG 2500-LV POS, IG 4000 NEG, IG 4000 POS, IG 5100 NEG, IG 5100 POS, IG 4500-LV NEG, IG 4500-LV POS. (C/US)