



# Letter of Conformity for Grid Support Interactive Inverter

UL STANDARD No. 1741-THIRD EDITION SUPPLEMENT SA

Reference Certificate: 2760387

Master Contract: 203213

Project: 80158408

Date Issued 2023-02-16

Issued to: **Fronius International GmbH  
Guenter Fronius Strasse 1  
Wels-Thalheim, 4600  
AUSTRIA**

***The products listed below have been found to comply with the applicable requirements of UL 1741-Third Edition (Rev. September 28, 2021) Supplement SA - GRID SUPPORT UTILITY INTERACTIVE INVERTERS AND CONVERTERS.***

Issued by: *Thian (Peter) Lim*  
Thian (Peter) Lim

Transformerless Special Purpose Grid Support Interactive Inverter, Models Fronius Symo 10.0-3 208-240, Fronius Symo 10.0-3 208-240 Lite, Fronius Symo 12.0-3 208-240, Fronius Symo 12.0-3 208-240 Lite, Fronius Symo 10.0-3 480, Fronius Symo 10.0-3 480 Lite, Fronius Symo 12.5-3 480, Fronius Symo 12.5-3 480 Lite, Fronius Symo 15.0-3 480, Fronius Symo 15.0-3 480 Lite, Fronius Symo 17.5-3 480, Fronius Symo 17.5-3 480 Lite, Fronius Symo 20.0-3 480, Fronius Symo 20.0-3 480 Lite, Fronius Symo 22.7-3 480, Fronius Symo 22.7-3 480 Lite, Fronius Symo 24.0-3 480, and Fronius Symo 24.0-3 480 Lite, permanently connected.

For details related to rating, reference should be made to the CSA Certification Record, the Descriptive Report or Annex A Ratings for Certificate of Conformance.



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***Supplement to Letter of Conformity for Grid Support Interactive Inverter***

**APPLICABLE REQUIREMENTS**

\*UL Std No. 1741-Third Edition - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Sources (Rev. September 28, 2021)

\*Note: Conformity to UL 1741-Third Edition (Rev. September 28, 2021) includes compliance with applicable requirements of UL1741 Supplement SA - GRID SUPPORT UTILITY INTERACTIVE INVERTERS AND CONVERTERS, California Rule 21(SRDs), Hawaiian Electric Co. Rule 14, Hawaiian Electric Co. SRD-UL-1741-SA-V1.0, IEEE 1547, IEEE 1547a and IEEE 1547.1.

Software Versions:

Device	Device Manufacturer/Type	Software Version (release date)	Device Checksum
ReCerbo (U2 on ReCerbo)	ST Microelectronics / STM32F437IIH6	00-02-17-00 (29.09.2014)	0x0C1913EEFC 0x93F1A23558 0x01DBDC401D 0xA05238A441
		V0.2.20.0 (04.12.2014)	0xFFB688D1F3 0xA9E70320F9 0x9ED48AA03C 0x347DDE8F5C
		V0.3.7.0 (17.07.2015)	0x033D2FB7BE 0x3E4429E74E 0x4B9B77DB18 0x25A1F7162B
		V0.3.9.1 (04.12.2015)	F118393039 7051770281 AA4A9020E0 B44A4FEC10
		V0.3.10.2 (05/04/2016)	B5754C2321 283AA8E595 90C8889239 3F26194BCB
		V0.3.14.7 (2017-05-11)	0x043E90A76F 0xA377597C27 0x9E962AC18E 0xE480FA2AC4
		V0.3.14.8 (2017-06-26)	546161d19b Ad5131c9ee Bd4fd7cb87 B86c053f3a



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Device	Device Manufacturer/Type	Software Version (release date)	Device Checksum
		V0.3.25.0 (2020-11-30)	0x42C2680BD0 0xDA43B99DD2 0xEE36096821 0xEF8FE850F1
PS1 – Roach (U4 on ROACH)	ST Microelectronics / STM32F405ZGT6  <u>Alternative:</u> ST Microelectronics / STM32F407XX(U4)	00-12-06-03 (29.09.2014)	0x8e77d100
		V0.13.26.3 (12.12.2014)	0x33575e6d
		V0.13.28.3 (30.04.2015)	0x47e7058f
		V0.18.8.3 (21.08.2015)	0x7d2799ea
		V0.18.32.3 (04.12.2015)	0x70418587
		V0.18.46.3 (29.03.2016)	0x66FFBF09
		V0.18.50.3 (26.07.2016)	0x04c39395
		V0.26.9.0 (2017-06-20)	0x25eb5a7d
		V0.26.18.0 (2017-09-12)	0x5d272a8a
		V0.26.25.0 (2017-12-04)	0x10364e15
		V1.5.1.1 (2021-02-11)	0xffc6b806
PS2 – Guard (U7 on SYMFILxxUS)	ST Microelectronics / STM32F415VGT6	00-02-08-04 (29.09.2014)	0xf6268138
		V0.4.12.4 (29.12.2014)	0x355cd8e9
		V0.4.16.4 (09.04.2015)	0x0215f445
		V0.6.22.4 (07.09.2015)	0xdc64aea5
		V0.6.26.4 (09.10.2015)	0xeca75edd
		V0.10.2.10 (2017-06-28)	0xff8d87d3
		V0.10.7.0 (2017-09-05)	0x998c8938
		V0.10.9.0 (2017-11-10)	0xab23f31a
		V0.11.8.1 (2021-03-09)	0xea584008

Tests were performed on Models Fronius Symo 12.0-3 208-240 and Fronius Symo 24.0-3 480 (representative of series), at Fronius International GmbH, Guenter Fronius Strasse 1, Wels-Thalheim, 4600 Austria under the CSA SMTc program, witnessed by CSA certifier.



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The following tests were performed under the requirements of UL 1741-3<sup>rd</sup> Edition with SUPPLEMENT SA - GRID SUPPORT UTILITY INTERACTIVE INVERTERS AND CONVERTERS with acceptable results.

General Overview of UL 1741 Evaluations: UL 1741 3 <sup>rd</sup> With SUPPLEMENT SA - GRID SUPPORT UTILITY INTERACTIVE INVERTERS AND CONVERTERS		
UL1741 – SA	Applicable Requirement/Topic	Comment
UL1741 - SA8	Anti-islanding Protection - Unintentional Islanding with Grid Support Functions Enabled	PASS
UL1741 - SA9 (Electric Rule No. 21 Table Hh.1)	L/HVRT Low and High Voltage Ride-Through	PASS
UL1741 - SA10 (Electric Rule No. 21 Table Hh.2)	L/HFRT Low and High Frequency Ride-Through	PASS
UL1741 - SA11 Electric (Rule No. 21 Hh.2k)	RR – Normal Ramp Rate and SS – Soft-Start Ramp Rate	PASS
UL1741 - SA12 (Electric Rule No. 21 Hh.2i)	SPF – Specified Power Factor	PASS
UL1741 - SA13 (Electric Rule No. 21 Hh.2J)	Volt/VAr Mode (Q(V))	PASS
UL1741 - SA14 (Electric Rule No. 21 Hh.2.1)	Frequency-Watt (FW) – Optional	PASS
UL1741 - SA15 (Electric Rule No. 21 Hh.2.m)	Volt-Watt (VW) – Optional	PASS

Grid Support Interactive Inverters certified with Reactive Power Priority				
Inverter Manufacturer Company Name	New Model numbers to be listed with CEC list[Nominal Voltage]	Question #1 (Y/N)	Question #2 (Y/N)	Question #3 (Y/N)
Fronius International GmbH	Fronius Symo 10.0-3 208-240		Y	Y
Fronius International GmbH	Fronius Symo 10.0-3 208-240 Lite		Y	Y
Fronius International GmbH	Fronius Symo 12.0-3 208-240		Y	Y
Fronius International GmbH	Fronius Symo 12.0-3 208-240 Lite		Y	Y
Fronius International GmbH	Fronius Symo 10.0-3 480		Y	Y
Fronius International GmbH	Fronius Symo 10.0-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 12.5-3 480		Y	Y
Fronius International GmbH	Fronius Symo 12.5-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 15.0-3 480		Y	Y
Fronius International GmbH	Fronius Symo 15.0-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 17.5-3 480		Y	Y
Fronius International GmbH	Fronius Symo 17.5-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 20.0-3 480		Y	Y
Fronius International GmbH	Fronius Symo 20.0-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 22.7-3 480		Y	Y



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Fronius International GmbH	Fronius Symo 22.7-3 480 Lite		Y	Y
Fronius International GmbH	Fronius Symo 24.0-3 480		Y	Y
Fronius International GmbH	Fronius Symo 24.0-3 480 Lite		Y	Y



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### Product Certification History

Project	Date	Description
80158408	2023-11-16	Update report 2760387 to include alternate fuse holder, DC and AC Surge Suppressor, DC+ to ground Capacitor and Opto- isolator with identical or better rated specifications. Due to the nature of changes as state above, no further testing is deemed necessary.
80106344	2022-03-28	Update report 2760387 to include software bugfixes and some alternative components.
70163421	2017-12-29	Update Report 2760387 to Evaluate Firmware Changes That Address Software Bugs Associated with Power Stage Changes Issues
70156295	2017-10-16	Update Report 2760387 to include UL1741 SA requirement for remaining models Fronius Symo 208V-240V series.
70130879	2017-07-27	Update Symo Series Report 2760387 to include new UL1741 SA.