



**VDE TEST REPORT****EMC**

<b>Report Reference No</b> ..... :	309829-TL7-1	
VDE File No..... :	5030740-3971-0001/309829	
Date of issue: .....	2023-10-17	
Laboratory .....	VDE Prüf- und Zertifizierungsinstitut GmbH	
Laboratory Address .....	Merianstrasse 28, 63069 Offenbach/Main; Germany	
Applicant's name .....	TSUNESS Co., Ltd	
Applicant's Address .....	No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China	
<b>Applied Standards:</b>		
German Standard	<b>European Standard</b>	<b>IEC/CISPR-Standard</b>
DIN EN 62920 (VDE 0126-131): 2018-07	EN 62920:2017	IEC 62920:2017
---	EN 301 489-17 V3.2.4 (2020-09)	---
Supplementary information: ---		
Test Report Form No..... :	EMC IEC 62920	
Master TRF..... :	2020-04-09	
Test item description .....	Power Converter for Photovoltaic	
Trade mark .....	TSUN	
Manufacturer .....	TSUNESS Co., Ltd	
Type reference(s) .....	TSOL-MS300,TSOL-MS350,TSOL-MS400, TSOL-MS300-D,TSOL-MS350-D,TSOL-MS400-D	
Ratings .....	Input: 60 V d.c., 14 A, 400 W Output: 220/230/240 V a.c., 2 A, 400 W	
<b>Final verdict</b> .....	<input checked="" type="checkbox"/> <b>Pass</b>	<input type="checkbox"/> <b>Fail</b>
Supplementary information .....	--	

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<b>Disclaimer:</b>					
This test report contains the result of a singular investigation carried out on the product submitted. A sample of this product was tested to found the accordance with the thereafter listed standards or clauses of standards resp.					
The test report does not entitle for the use of a VDE Certification Mark and considers solely the requirements of the specifications mentioned below.					
Whenever reference is made to this test report towards third party, this test report shall be made available on the very spot in full length.					



Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
Tested by (Name, Signature) .....	Dr. Psotta, Torsten	 (Authorization of test report)
Function .....	Testing engineer	
Approved by (Name, Signature) .....	Guiseppe, Citera	
Function .....	Technical Certification Officer	

<b>List of attachments (including a total number of pages in each attachment):</b>	
Clause 7.5 EMC-tests according ETSI EN 301 489 regarding the radio function	
<b>Summary of testing:</b> See verdict section.	
<b>Tests performed (name of test and test clause):</b> See verdict section.	<b>Testing location:</b> Merianstrasse 28 63069 Offenbach/Main; Germany
<b>Summary of compliance with national differences (list of countries addressed):</b> N/A	
<input type="checkbox"/> The product fulfils the requirements of:---	

**Copy of marking plate:**

<b>PV Microinverter</b>			
<b>Model: TSOL-MS400</b>			
Max. Input Voltage	60V d.c.	Nominal Output Voltage	220/230/240V a.c.
MPPT Voltage Range	16~60V d.c.	Nominal Output Frequency	50/60Hz
Max. Continuous Input Current	14A d.c.	Output Power Factor	-0.8 ... +0.8
Max. Input Short Circuit Current	20A d.c.	Type of Enclosure	IP67
Max. Continuous Output Power	400VA	Over Voltage Category	PV: II, Mains: III
Rated Output Power	400W	Protective Class	I
Max. Continuous Output Current	2A a.c.	Operating Ambient Temp	-40°C ~ +65°C
<b>TSUNESS Co., Ltd</b> www.tsun-ess.com      Tel: +86 0512 6618 6028		<b>Importer Contact Information:</b>	
No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China		     	





<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	Pass
- test object does not meet the requirement.....:	Fail
<b>Testing:</b>	
Test sample condition .....	<input checked="" type="checkbox"/> Non-damaged sample
	Remark: --
Date of receipt of test item .....	2023-09-15
Date (s) of performance of tests .....	2023-09-15 to 2023-10-05
<b>General remarks:</b>	
<ul style="list-style-type: none"> <li>▪ This report shall not be reproduced except in full without the written approval of the testing laboratory.</li> <li>▪ The test results presented in this report relate only to the item(s) tested.</li> <li>▪ "(see remark #)" refers to a remark appended to the report.</li> <li>▪ "(see Annex #)" refers to an annex appended to the report.</li> <li>▪ Throughout this report a comma is used as the decimal separator.</li> </ul>	
<b>Name and address of factory (ies) .....</b>	TSUNESS Co., Ltd No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China
<b>General product information and other remarks:</b>	
<p>The EMC tests were conducted on a representative sample TSOL-MS400, provided by the manufacturer. This test cover as well following derivates: TSOL-MS300,TSOL-MS350, TSOL-MS300-D,TSOL-MS350-D,TSOL-MS400-D</p> <p>According to the manufacturer, the above mentioned types have basically the identical construcion and are provided with the same electronic assembly. The difference consist in power generation of respectively 300 W or 350 W, instead of 400 W. The sample with highest power generation of 400 W was tested.</p>	

**VDE TEST REPORT****EMC**

<b>Report Reference No..... :</b>	309829-TL7-2	
VDE File No..... :	5030740-3971-0001/309829	
Date of issue: .....	2023-10-17	
Laboratory .....	VDE Prüf- und Zertifizierungsinstitut GmbH	
Laboratory Address .....	Merianstrasse 28, 63069 Offenbach/Main; Germany	
Applicant's name .....	TSUNESS Co., Ltd	
Applicant's Address .....	No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China	
<b>Applied Standards:</b>		
German Standard	<b>European Standard</b>	<b>IEC/CISPR-Standard</b>
DIN EN 62920 (VDE 0126-131): 2018-07	EN 62920:2017	IEC 62920:2017
---	EN 301 489-17 V3.2.4 (2020-09)	---
Supplementary information: ---		
Test Report Form No..... :	EMC IEC 62920	
Master TRF..... :	2020-04-09	
Test item description .....	Power Converter for Photovoltaic	
Trade mark .....	TSUN	
Manufacturer .....	TSUNESS Co., Ltd	
Type reference(s) .....	TSOL-MS600,TSOL-MS700,TSOL-MS800,TSOL-MS600-D,TSOL-MS700-D,TSOL-MS800-D	
Ratings .....	Input: 60 V d.c., 2 x 14 A, 800 W Output: 220/230/240 V a.c., 4 A, 800 W	
<b>Final verdict .....</b>	<input checked="" type="checkbox"/> <b>Pass</b>	<input type="checkbox"/> <b>Fail</b>
Supplementary information .....	--	





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<b>Disclaimer:</b>					
This test report contains the result of a singular investigation carried out on the product submitted. A sample of this product was tested to found the accordance with the thereafter listed standards or clauses of standards resp.					
The test report does not entitle for the use of a VDE Certification Mark and considers solely the requirements of the specifications mentioned below.					
Whenever reference is made to this test report towards third party, this test report shall be made available on the very spot in full length.					



Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
Tested by (Name, Signature) .....	Dr. Psotta, Torsten	 (Authorization of test report)
Function .....	Testing engineer	
Approved by (Name, Signature) .....	Guiseppa, Citera	
Function .....	Technical Certification Officer	

List of attachments (including a total number of pages in each attachment): --	
Summary of testing: See verdict section.	
Tests performed (name of test and test clause): See verdict section.	Testing location: Merianstrasse 28 63069 Offenbach/Main; Germany
Summary of compliance with national differences (list of countries addressed): N/A	
<input type="checkbox"/> The product fulfils the requirements of:  (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)	

Copy of marking plate: (Artwork)

<b>PV Microinverter</b>			
<b>Model: TSOL-MS800</b>			
Max. Input Voltage	60V d.c.	Nominal Output Voltage	220/230/240V a.c.
MPPT Voltage Range	16~60V d.c.	Nominal Output Frequency	50/60Hz
Max. Continuous Input Current	2x14A d.c.	Output Power Factor	-0.8 ... +0.8
Max. Input Short Circuit Current	2x20A d.c.	Type of Enclosure	IP67
Max. Continuous Output Power	800VA	Over Voltage Category	PV: II ,Mains: III
Rated Output Power	800W	Protective Class	I
Max. Continuous Output Current	4A a.c.	Operating Ambient Temp	-40°C ~ +65°C
<b>TSUNESS Co., Ltd</b>		Importer Contact Information:	
www.tsun-ess.com    Tel: +86 0512 6618 6028			
No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China		     	



<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	Pass
- test object does not meet the requirement.....:	Fail
<b>Testing:</b>	
Test sample condition .....	<input checked="" type="checkbox"/> Non-damaged sample
	Remark: --
Date of receipt of test item .....	2023-09-25
Date (s) of performance of tests .....	2023-09-25 to 2023-10-10
<b>General remarks:</b>	
<ul style="list-style-type: none"> <li>▪ This report shall not be reproduced except in full without the written approval of the testing laboratory.</li> <li>▪ The test results presented in this report relate only to the item(s) tested.</li> <li>▪ "(see remark #)" refers to a remark appended to the report.</li> <li>▪ "(see Annex #)" refers to an annex appended to the report.</li> <li>▪ Throughout this report a comma is used as the decimal separator.</li> </ul>	
<b>Name and address of factory (ies) .....</b>	TSUNESS Co., Ltd No. 2266, Taiyang Road, High-speed Rail New Town, Xiangcheng District, Suzhou City, Jiangsu Province, 215133, P.R. China
<b>General product information and other remarks:</b>	
<p>The EMC tests were conducted on a representative sample TSOL-MS800-D, provided by the manufacturer. This test cover as well following derivatives: TSOL-MS600,TSOL-MS700, TSOL-MS800, TSOL-MS600-D,TSOL-MS700-D,</p> <p>According to the manufacturer, the above mentioned types have basically the identical construction and are provided with the same electronic assembly. The difference consist in power generation of respectively 600 W or 700 W, instead of 800 W. The sample with highest power generation of 800 W was tested.</p>	