

Victron Energy B.V.

Almere Haven

The quality management system of **Victron Energy B.V.** and the application thereof complies with the requirements as stipulated in the standard:

NEN-EN-ISO 9001:2015

Evaluation of the quality management system took place in accordance with TÜV Nederland's certification regulations for the field of application:

**Development, delivery and repair of chargers, inverters, converters,
and electrical devices.**

This certification is subject to annual evaluation by TÜV Nederland.

Registration number: 24574/2.2
Start date certificate: 16-07-2018
Certificate valid until: 06-07-2021
Date of first certificate: 06-07-2015
Date audit: 05-04-2018
Previous certificate valid until: 06-07-2018

Managing Director
Mr. E.W.A.C. Franken



THE NETHERLANDS
(N E D E R L A N D)

COMMUNICATION

Concerning ⁽¹⁾:

- approval granted
- ~~approval extended~~
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~



of a type of ~~electrical~~/electronic sub-assembly ⁽¹⁾ with regard to Regulation number 10.**Approval number: E4-10R-053813****Extension number: 00**

1. Make (trade name of manufacturer) : Victron Energy
2. Type and general commercial description(s) : Phoenix Inverter 12/250 230V VE.Direct, Phoenix Inverter 12/375 230V VE.Direct, Phoenix Inverter 12/500 230V VE.Direct, Phoenix Inverter 24/250 230V VE.Direct, Phoenix Inverter 24/375 230V VE.Direct, Phoenix Inverter 24/500 230V VE.Direct
3. Means of identification of type, if marked on the ~~vehicle~~/component/~~separate technical unit~~ ⁽¹⁾ : Screenprinted.
- 3.1. Location of that marking : On the top cover.
4. Category of vehicle : All.
5. Name and address of manufacturer : Victron Energy B.V.,
6. In the case of components and separate technical units, location and method of affixing of the approval mark : Screenprinted on top cover.



Approval number: E4-10R-053813

Extension number: 00

7. Address(es) of assembly plant(s)
8. Additional information (where applicable) : see Appendix below
9. Technical service responsible for carrying out the tests : DARE!! Measurements
10. Date of test report : 2017 March, 14
2017 March, 14
11. Number of test report : 17C00201RPT01
17C00231RPT01
12. Remarks (if any) : see Appendix
13. Place : Zoetermeer
14. Date : 17-APR-2017
15. Signature : 

16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : --

⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4-10R-053813, Extension number: 00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly⁽¹⁾ under Regulation number 10.

1. Additional information : Phoenix inverter family with the input voltage levels of 12V and 24V, both with 3 output power classes:250VA, 375VA and 500VA.
The design and PCB of the 250VA and 375VA variants are identical, the 500VA version is slightly different. The design and PCB of all 3 input voltage variants are identical, except the maximum voltage rating of the used mosfets and electrolytic capacitors, but it is very unlikely that it will affect the behavior of the EUT.
The tested variants are:
12V 375VA, 17C00201RPT01;
12V 500VA, 17C00231RPT01.
- 1.1. Electrical system rated voltage : 12, 24Vdc 230Vac, NA ground(1)
- 1.2. This ESA can be used on any vehicle type with the following restrictions : NA
- 1.2.1. Installation conditions, if any : NA
- 1.3. This ESA can be used only on the following vehicle types : All
- 1.3.1. Installation conditions, if any : NA
- 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : Bulk Current Injection (BCI), 20 – 200 MHz
Radiated Immunity, 200 MHz – 2 GHz
Electrical Disturbance test on Voltage supply lines
- 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : DARE!! Measurements
2. Remarks : --

⁽¹⁾ Strike out what does not apply.



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of a type of ~~electrical~~/electronic sub-assembly⁽¹⁾ with regard to Regulation number 10.**Approval number: E4*10R05/01*4188*00**

1. Make (trade name of manufacturer) : Victron Energy
2. Type and general commercial description(s) : Phoenix Inverter 12/800 230V VE.Direct
Phoenix Inverter 24/1200 230V VE.Direct
Phoenix Inverter 48/1200 230V VE.Direct
3. Means of identification of type, if marked on the ~~vehicle~~/component/
~~separate technical unit~~⁽¹⁾ : Screenprinted
- 3.1. Location of that marking : On the top cover
4. Category of vehicle : All
5. Name and address of manufacturer : Victron Energy B.V.
6. In the case of components and separate technical units, location and method of affixing of the approval mark : Sreenprinted on the top cover

Approval number: E4*10R05/01*4188*00

7. Address(es) of assembly plant(s)
8. Additional information (where applicable) : see Appendix below
9. Technical service responsible for carrying out the tests : DARE!! Measurements

10. Date of test report : 2018 July, 16

11. Number of test report : 17C01435RPT01

12. Remarks (if any) : see Appendix

13. Place : Zoetermeer

14. Date : 25-SEP-2018

15. Signature :


P. van Tol



16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

17. Reasons for extension : --

⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4*10R05/01*4188*00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly⁽¹⁾ under Regulation number 10.

1. Additional information : The design and PCB of the 12/800, 24/1200 and 48/1200 variants are identical.
The design and PCB of all three input voltage variants are identical, except the maximum voltage rating of the used mosfets and electrolytic capacitors, but it is very unlikely that it will affect the behavior of the EUT.
The EUT is not immunity related.

As representative the Phoenix Inverter 48/1200 230V VE.Direct has been tested under reference number 17C01435RPT01
- 1.1. Electrical system rated voltage : 12V, 24V, 48Vdc 230Vac, NA ground⁽¹⁾
- 1.2. This ESA can be used on any vehicle type with the following restrictions : Not applicable
- 1.2.1. Installation conditions, if any : Not applicable
- 1.3. This ESA can be used only on the following vehicle types : All
- 1.3.1. Installation conditions, if any : Not applicable
- 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : Radiated immunity, 200 MHz – 2 GHz
Bulk current injection (BCI), 20 – 200 MHz
Electrical disturbance test on voltage supply lines
- 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : DARE!! Measurements
2. Remarks : Documents:
Certificate
Type approval mark example
Annex 2B
Report
Schematic and PCB SWL 800-12V
Schematic and PCB FAN 24V&48V
Schematic and PCB Main 24V&48V
BOM 12V&24V&48V

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of a type of ~~electrical~~/electronic sub-assembly⁽¹⁾ with regard to Regulation number 10.**Approval number: E4*10R05/01*4191*00**

1. Make (trade name of manufacturer) : Victron Energy
2. Type and general commercial description(s) : 12/1200 230V VE.Direct
3. Means of identification of type, if marked on the ~~vehicle~~/component/
~~separate technical unit~~⁽¹⁾ : Screenprinted
- 3.1. Location of that marking : On the top cover
4. Category of vehicle : All
5. Name and address of manufacturer : Victron Energy B.V.

6. In the case of components and separate technical units, location and method of affixing of the approval mark : Screenprinted on the top cover
7. Address(es) of assembly plant(s) :



Approval number: E4*10R05/01*4191*00

8. Additional information (where applicable) : see Appendix below
9. Technical service responsible for carrying out the tests : DARE!! Measurements
10. Date of test report : 2018 July, 11
11. Number of test report : 17C01431RPT01
12. Remarks (if any) : see Appendix
13. Place : Zoetermeer
14. Date : 24-SEP-2018
15. Signature :


P. van Tol



16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : --

⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4*10R05/01*4191*00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly⁽¹⁾ under Regulation number 10.

1. Additional information : The EUT is not immunity related
- 1.1. Electrical system rated voltage : 12Vdc 230Vac, NA ground⁽¹⁾
- 1.2. This ESA can be used on any vehicle type with the following restrictions : Not applicable
- 1.2.1. Installation conditions, if any : Not applicable
- 1.3. This ESA can be used only on the following vehicle types : All
- 1.3.1. Installation conditions, if any : Not applicable
- 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : Radiated immunity, 200 MHz – 2 GHz
Bulk current injection (BCI), 20 – 200 MHz
Electrical disturbance test on voltage supply lines
- 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : DARE!! Measurements
2. Remarks : Documents:
Certificate
Type approval mark example
Annex 2B
Report
Schematic and PCB FAN V9
Schematic and PCB MAIN v25
Schematic and PCB FILTER VOTC25
BOM

⁽¹⁾ Strike out what does not apply.



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 of a type of ~~electrical~~/electronic sub-assembly⁽¹⁾ with regard to Regulation number 10.

Approval number: E4*10R05/01*4190*00

- | | | |
|------|---|--|
| 1. | Make (trade name of manufacturer) | : Victron Energy |
| 2. | Type and general commercial description(s) | : Phoenix Inverter 24/800 230V VE.Direct
Phoenix Inverter 48/800 230V VE.Direct |
| 3. | Means of identification of type, if marked on the vehicle /component/
separate technical unit ⁽¹⁾ | : Screenprinted |
| 3.1. | Location of that marking | : On the top cover |
| 4. | Category of vehicle | : All |
| 5. | Name and address of manufacturer | : Victron Energy B.V. |
| 6. | In the case of components and separate technical units, location and method of affixing of the approval mark | : Sreenprinted on the top cover |



Approval number: E4*10R05/01*4190*00

7. Address(es) of assembly plant(s)
8. Additional information (where applicable) : see Appendix below
9. Technical service responsible for carrying out the tests : DARE!! Measurements
10. Date of test report : 2018 July, 11
11. Number of test report : 17C01432RPT01
12. Remarks (if any) : see Appendix
13. Place : Zoetermeer
14. Date : 25-SEP-2018
15. Signature :
16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : --


P. van Tol



⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4*10R05/01*4190*00

concerning the type-approval of an ~~electrical~~/electronic sub-assembly⁽¹⁾ under Regulation number 10.

1. Additional information : The design and PCB of the 24/800 and 48/800 variants are identical.
The design and PCB of all two input voltage variants are identical, except the maximum voltage rating of the used mosfets and electrolytic capacitors, but it is very unlikely that it will affect the behavior of the EUT.
The EUT is not immunity related.

As representative the Phoenix inverter 24/800 230V VE.Direct has been tested under reference number 17C01432RPT01
- 1.1. Electrical system rated voltage : 24V, 48Vdc 230Vac, NA ground⁽¹⁾
- 1.2. This ESA can be used on any vehicle type with the following restrictions : Not applicable
- 1.2.1. Installation conditions, if any : Not applicable
- 1.3. This ESA can be used only on the following vehicle types : All
- 1.3.1. Installation conditions, if any : Not applicable
- 1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were : Radiated immunity, 200 MHz – 2 GHz
Bulk current injection (BCI), 20 – 200 MHz
Electrical disturbance test on voltage supply lines
- 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : DARE!! Measurements
2. Remarks : Documents:
Certificate
Type approval mark example
Annex 2B
Report
Schematic SWL 800-24V&48V
PCB FAN 24V&48V
PCB MAIN 24V&48V
BOM 24V
BOM 48 V

⁽¹⁾ Strike out what does not apply.



Declaration of Conformity

Applicant: Victron Energy B.V.
Product type: Battery Inverter

Model and electrical rating:	Model	DC in Voltage, Current	AC out Voltage, Current	AC out VA, W	Freq out
	Phoenix Inverter 12/250 230V VE.Direct	12V nom / 9.2-17V, 23A	230V, 0.85A	250VA, 200W	50Hz
	Phoenix Inverter 12/375 230V VE.Direct	12V nom / 9.2-17V, 35A	230V, 1.3A	375VA, 300W	50Hz
	Phoenix Inverter 12/500 230V VE.Direct	12V nom / 9.2-17V, 50A	230V, 1.75A	500VA, 400W	50Hz
	Phoenix Inverter 24/250 230V VE.Direct	24V nom / 18.4-34V, 12A	230V, 0.85A	250VA, 200W	50Hz
	Phoenix Inverter 24/375 230V VE.Direct	24V nom / 18.4-34V, 18A	230V, 1.3A	375VA, 300W	50Hz
	Phoenix Inverter 24/500 230V VE.Direct	24V nom / 18.4-34V, 25A	230V, 1.75A	500VA, 400W	50Hz
	Phoenix Inverter 48/250 230V VE.Direct	48V nom / 36.8-62V, 6A	230V, 0.85A	250VA, 200W	50Hz
	Phoenix Inverter 48/375 230V VE.Direct	48V nom / 36.8-62V, 9A	230V, 1.3A	375VA, 300W	50Hz
	Phoenix Inverter 48/500 230V VE.Direct	48V nom / 36.8-62V, 13A	230V, 1.75A	500VA, 400W	50Hz

representatives test samples of above stated models passed the tests according to:

Standard: IEC60335-1:2010
AS/NZS 4763:2011
Report no: 17PP135-01
17PP135-02
Certificate no: 17-186-00
Date of issue: 2017-05-16



Raphael Rader



Declaration of Conformity

Applicant: Victron Energy B.V.

Battery Inverters

Product type: Phoenix inverter 12/800 230V VE.Direct XXX*

Model:

Phoenix inverter 24/800 230V VE.Direct XXX*

Phoenix inverter 48/800 230V VE.Direct XXX*

Phoenix inverter 12/1200 230V VE.Direct XXX*

Phoenix inverter 24/1200 230V VE.Direct XXX*

Phoenix inverter 48/1200 230V VE.Direct XXX*

*Where xxx representing the output socket and may either SCHUKO, UK, IEC-320 or AU/NZ.

See page 2

Rating:

A representative test sample of above stated model passed the tests according to:

Standard: IEC 60335-1:2010 + A1:2013
EN 60335-1:2012 + AC:2014 + A11:2014
AS/NZS 4763:2011

Report no: 19PP111-01, 19PP111-02

Certificate no: 19-045-00

Date of issue: 2019-04-24



Michael Schugg

- Digitally signed | see <http://ca.primara.net> for more details -

Michael Schugg



MODEL:	DC in Voltage, Current	AC Out Voltage nom, Current	AC out VA, W	Freq nom out.
Phoenix inverter 12/800 230V VE.Direct XXX	12V nom / 9,2-17V, 76A	230VAC; 2,8A	800VA, 650W	50Hz
Phoenix inverter 24/800 230V VE.Direct XXX	24V nom / 18,4-34V, 38A	230VAC; 2,8A	800VA, 650W	50Hz
Phoenix inverter 48/800 230V VE.Direct XXX	48V nom / 36,8-62V, 19A	230VAC; 2,8A	800VA, 650W	50Hz
Phoenix inverter 12/1200 230V VE.Direct XXX	12V nom / 9,2-17V, 120A	230VAC; 4A	1200VA, 1000W	50Hz
Phoenix inverter 24/1200 230V VE.Direct XXX	24V nom / 18,4-34V, 60A	230VAC; 4A	1200VA, 1000W	50Hz
Phoenix inverter 48/1200 230V VE.Direct XXX	48V nom / 36,8-62V, 30A	230VAC; 4A	1200VA, 1000W	50Hz

DECLARATION OF CONFORMITY



COMPANY : Victron Energy B.V.

Declares that the following products:

PRODUCT TYPE : DC TO AC SINEWAVE INVERTER
BRAND : Victron Energy
MODELS :

Phoenix Inverter 12/250 VE.Direct 120V	Phoenix Inverter 12/250 VE.Direct 230V
Phoenix Inverter 12/375 VE.Direct 120V	Phoenix Inverter 12/375 VE.Direct 230V
Phoenix Inverter 12/500 VE.Direct 120V	Phoenix Inverter 12/500 VE.Direct 230V
Phoenix Inverter 12/800 VE.Direct 120V	Phoenix Inverter 12/800 VE.Direct 230V
Phoenix Inverter 12/1200 VE.Direct 120V	Phoenix Inverter 12/1200 VE.Direct 230V
Phoenix Inverter 24/250 VE.Direct 120V	Phoenix Inverter 24/250 VE.Direct 230V
Phoenix Inverter 24/375 VE.Direct 120V	Phoenix Inverter 24/375 VE.Direct 230V
Phoenix Inverter 24/500 VE.Direct 120V	Phoenix Inverter 24/500 VE.Direct 230V
Phoenix Inverter 24/800 VE.Direct 120V	Phoenix Inverter 24/800 VE.Direct 230V
Phoenix Inverter 24/1200 VE.Direct 120V	Phoenix Inverter 24/1200 VE.Direct 230V
Phoenix Inverter 48/250 VE.Direct 120V	Phoenix Inverter 48/250 VE.Direct 230V
Phoenix Inverter 48/375 VE.Direct 120V	Phoenix Inverter 48/375 VE.Direct 230V
Phoenix Inverter 48/500 VE.Direct 120V	Phoenix Inverter 48/500 VE.Direct 230V
Phoenix Inverter 48/800 VE.Direct 120V	Phoenix Inverter 48/800 VE.Direct 230V
Phoenix Inverter 48/1200 VE.Direct 120V	Phoenix Inverter 48/1200 VE.Direct 230V

Are in conformity with the requirements of the following Directives of the European Union:

EMC Directive 2014/30/EU with the following harmonized standards:

EN 61000-6-1:2007
EN 61000-6-2:2005
EN 61000-6-3:2007/A1:2011/C11:2012
EN 55014-1:2017
EN 55014-2:2015
ISO 7637-2:2016

Low Voltage Directive 2014/35/EU with the following harmonized standards:

EN 60335-1:2012/A13: 2017
EN 62109-1:2010

Restriction of the use of certain hazardous substances RoHS (2011/65/EU and 2015/863/EU) with the following harmonized standards:

EN-IEC 63000:2018

Vehicle Radiated Emissions & Immunity Testing

ECE R10-5

CE MARK DATE:

Signed: Reinout Vader

Authority: Managing Director
Date: 18 July 2019