

Certificate

for the quality management system according to
NEN-EN-ISO 9001:2015



The certification body TÜV NORD Nederland hereby confirms that the certification took place in accordance with its certification regulations for the organisation

Victron Energy B.V.
De Paal 35
1351 JG Almere Haven
The Netherlands

The management system and the application thereof complies with the requirements of the standard. The certification is subject to annual evaluation by TÜV NORD Nederland.

Field of application

Development, delivery and repair of chargers, transformers, inverters, batteries and related cabling and control panels, incl. software.

Registration number 24574-4.4

Start date certificate 06-07-2024
Certificate valid until 06-07-2027
Date of first certificate 06-07-2015

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

A blue ink handwritten signature of Mr. E.W.A.C. Franken.

TÜV NORD Nederland B.V.
Ekkersrijt 4401, 5692 DL Son en Breugel
The Netherlands



Certificate

Applicant: **Victron Energy B.V.**
De Paal 35
1351 JG Almere-Haven
The Netherlands

Product: **Inverter with integrated automatic disconnection device
between a generator and the public low-voltage grid**

Model:	Multiplus Compact			
	12/800/35-16	12/1200/50-16	12/1600/70-16	12/2000/80-30
	24/800/16-16	24/1200/28-16	24/1600/40-16	24/2000/50-30
Rating:	700W	1000W	1300W	1600W

Intended use:

An automatic disconnection device with single-phase mains surveillance in accordance with Engineering Recommendation G83/2 for photovoltaic systems with a single-phase parallel coupling via an inverter to the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter.

Applied standards and guidelines:

Engineering Recommendation G83/2 Issue 2 – August 2012

Recommendations for the connection of small-scale embedded generators in parallel with public low-voltage distribution networks.

The safety concept of an aforementioned representative product corresponds at the time of issue of this certificate to the valid safety specifications for the specified use in accordance with regulations.

The above mentioned inverters are also in compliance with the standard, if installed in parallel and three-phase configurations up to 16A per phase. For configurations above 16A per phase the DNO must be consulted.

Report No: 15PP103-01

Certificate No: 15-208-03

Date of issue: 2017-05-02



Andreas Aufmuth
Certification Department



Power Quality. Harmonics.
Multiplus Compact 12/2000/80-30

Equipment Phases: Single Phase

Harmonic:	At 45-55% of rated output	At 100% of rated output	Harmonic Limit (A)
	Measured Value (A)		
2nd	0,16	0,06	1,080
3rd	0,24	0,94	2,300
4th	0,13	0,05	0,430
5th	0,08	0,13	1,140
6th	0,09	0,03	0,300
7th	0,07	0,04	0,770
8th	0,06	0,02	0,230
9th	0,03	0,03	0,400
10th	0,03	0,01	0,184
11th	0,01	0,02	0,330
12th	0,01	0,00	0,153
13th	0,01	0,02	0,210
14th	0,01	0,00	0,131
15th	0,01	0,02	0,150
16th	0,01	0,00	0,115
17th	0,00	0,02	0,132
18th	0,01	0,00	0,102
19th	0,00	0,01	0,118
20th	0,00	0,00	0,092
21st	0,00	0,01	0,107
22nd	0,00	0,00	0,084
23rd	0,01	0,01	0,098
24th	0,00	0,00	0,077
25th	0,00	0,01	0,090
26th	0,00	0,00	0,071
27th	0,00	0,01	0,083
28th	0,00	0,00	0,066
29th	0,00	0,01	0,078
30th	0,00	0,00	0,061
31st	0,00	0,01	0,073
32nd	0,00	0,00	0,058
33rd	0,00	0,00	0,068
34th	0,00	0,00	0,054
35th	0,00	0,00	0,064
36th	0,00	0,00	0,051
37th	0,00	0,01	0,061
38th	0,00	0,00	0,048
39th	0,00	0,01	0,058
40th	0,00	0,00	0,046

Multiplus Compact 12/800/35-16

Equipment Phases: Single Phase			
Harmonic:	At 45-55% of rated output	At 100% of rated output	Harmonic Limit (A)
	Measured Value (A)		
2nd	0,02	0,02	1,080
3rd	0,49	0,67	2,300
4th	0,02	0,02	0,430
5th	0,11	0,14	1,140
6th	0,01	0,02	0,300
7th	0,03	0,04	0,770
8th	0,01	0,02	0,230
9th	0,01	0,03	0,400
10th	0,01	0,01	0,184
11th	0,01	0,02	0,330
12th	0,00	0,00	0,153
13th	0,01	0,01	0,210
14th	0,00	0,00	0,131
15th	0,01	0,01	0,150
16th	0,00	0,00	0,115
17th	0,01	0,02	0,132
18th	0,00	0,00	0,102
19th	0,01	0,01	0,118
20th	0,00	0,00	0,092
21st	0,01	0,01	0,107
22nd	0,00	0,00	0,084
23rd	0,00	0,01	0,098
24th	0,00	0,00	0,077
25th	0,00	0,01	0,090
26th	0,00	0,00	0,071
27th	0,00	0,01	0,083
28th	0,00	0,00	0,066
29th	0,00	0,01	0,078
30th	0,00	0,00	0,061
31st	0,00	0,00	0,073
32nd	0,00	0,00	0,058
33rd	0,01	0,01	0,068
34th	0,00	0,00	0,054
35th	0,00	0,01	0,064
36th	0,00	0,00	0,051
37th	0,00	0,01	0,061
38th	0,00	0,00	0,048
39th	0,00	0,01	0,058
40th	0,00	0,00	0,046

Power Quality. Voltage Fluctuations and Flicker.

Multiplus Compact 12/2000/80-30

	Starting			Stopping			Running	
	dmax	dc	d(t)	Dmax	dc	d(t)	Pst	Plt 2 hours
Measured Values	-1,20	-1,17	0,00	1,17	1,12	0,00	0,185	0,185
Normalised to standard impedance	-1,20	-1,17	0,00	1,17	1,12	0,00	0,185	0,185
Limits	4%	3,3%	3,3% 500ms	4%	3,3%	3,3% 500ms	1,0	0,65

Multiplus Compact 12/800/35-16

	Starting			Stopping			Running	
	dmax	dc	d(t)	Dmax	dc	d(t)	Pst	Plt 2 hours
Measured Values	0,53	0,50	0,00	-0,53	-0,37	0,00	0,187	0,187
Normalised to standard impedance	0,53	0,50	0,00	-0,53	-0,37	0,00	0,187	0,187
Limits	4%	3,3%	3,3% 500ms	4%	3,3%	3,3% 500ms	1,0	0,65

Power Quality. Power Factor.

Output Voltage	216,2V	230V	253V
Measured Value	0,990	0,984	0,980
Limit		>0,95	

Protection. Frquency Tests.

Function	Setting		Trip test		No trip test	
	Frequency	Time delay	Frequency	Time delay	Frequency time	Confirm no trip
U/F stage 1	47,5Hz	20s	47,48Hz	20,05s	47,7Hz 25s	No trip
U/F stage 2	47,0Hz	0,5s	46,99Hz	0,539s	47,2Hz 19,98s	No trip
					46,8Hz 0,48s	No trip
O/F stage 1	51,5Hz	90s	51,52Hz	90,10s	51,3Hz 95s	No trip
O/F stage 2	52,0Hz	0,5s	52,00Hz	0,589s	51,8Hz 89,98s	No trip
					52,2Hz 0,48s	No trip

Protection. Voltage Tests.

Function	Setting		Trip test		No trip test	
	Voltage	Time delay	Voltage	Time delay	Voltage time	Confirm no trip
U/V stage 1	200,1V	2,5s	199,9V	2,56s	204,1V 3,5s	No trip
U/V stage 2	184,0V	0,5s	183,8V	0,57s	188V 2,48s	No trip
					180V 0,48s	No trip
O/V stage 1	262,2V	1,0s	264,0V	1,06s	258,2V 2,0s	No trip
O/V stage 2	273,7V	0,5s	275,5V	0,57s	269,7V 0,98s	No trip
					277,7V 0,48s	No trip

Protection. Loss of Mains Test according BS EN 62116 for Inverters.

Test Power and imbalance	33% -5% Q	66% -5% Q	100% -5% Q	33% +5% Q	66% +5% Q	100% +5% Q
Trip time	0,12s	0,11s	0,17s	0,17s	0,10s	0,15s

Protection. Reconnection Timer.

Reconnection Time	Under/Over voltage	Under/over frequency	Loss of mains	
Minimum value	20 seconds			
Actual settings	20s	20s	20s	
Recorded value	22,7s	22,9s	22,7s	
	At 266,2V	At 196,1V	At 47,4Hz	At 51,6Hz
Confirmation that the unit does not re-connect.	No connection to grid	No connection to grid	No connection to grid	No connection to grid

Fault Level Contribution.

For an inverter SEEG

Parameter	Symbol	Time after fault	Volts	Amps
Peak short circuit current	i_p	20ms	105,57	8,02
Initial Value of aperiodic current	A	100ms	74,06	0,06
Initial symmetrical short-circuit current	I_k	250ms	74,08	0,04
Decaying (aperiodic) component of short-circuit current	i_{DC}	500ms	74,15	0,06

As SSEGs (small-scale embedded generators) for PV are inverter-connected the max. short circuit current is the max. AC current.

Prüfbescheinigung *Declaration of Conformity*

Antragsteller: Victron Energy B.V.
Applicant: Torenallee 20, 5617 BC Eindhoven
The Netherlands

Produkttyp: Inverter charger
Product type:

Model Overview				
	DC IN	AC OUT	AC IN	DC OUT
Multiplus Compact 12/800/35-16	12V; 80A	230V; 3A; 50/60Hz	187-250V; 16A; 50/60Hz	12V; 35A
Multiplus Compact 12/1200/50-16	12V; 120A	230V; 4A; 50/60Hz		12V; 50A
Multiplus Compact 12/1600/70-16	12V; 150A	230V; 4A; 50/60Hz		12V; 70A
Multiplus Compact 24/800/16-16	24V; 40A	230V; 3A; 50/60Hz		24V; 16A
Multiplus Compact 24/1200/25-16	24V; 60A	230V; 4A; 50/60Hz		24V; 26A
Multiplus Compact 24/1600/40-16	24V; 80A	230V; 6A; 50/60Hz		24V; 40A
Multiplus Compact 12/2000/80/30	12V; 80A	230V; 8A; 50/60Hz		12V; 80A
Multiplus Compact 24/2000/50-30	24V; 80A	230V; 8A; 50/60Hz		24V; 50A
Easyplus Compact 12/1600/70-16	12V; 150A	230V; 4A; 50/60Hz		12V; 70A

Ein repräsentatives Prüfmuster der oben genannten Modelle bestand die Prüfung nach:
A representative test sample of above stated models passed the tests according to:

Norm: IEC 60335-2-29:2002 (Fourth Edition) + A1:2004 + A2:2009 in conjunction
Standard: with IEC 60335-1:2010 (Fifth Edition)) and EN60335-2-29:2004 + A2:2010

Berichtsnummer: 15PP103-01_0
Report no:

Zertifikatsnummer: 15-229-00
Certificate no:

Ausstelldatum: 2015-12-10
Date of issue:



Valentin Haug

Certificate

Applicant: **Victron Energy B.V.**
De Paal 35
1351 JG Almere Haven
Netherlands

Product: **Photovoltaic Inverter with integrated automatic disconnection device between a generator and the public low-voltage grid**

Model:	Multiplus Compact			
	12/800/35-16	12/1600/70-16	24/800/16-16	24/1600/40-16
12/1200/50-16	12/2000/80-30	24/1200/25-16	24/2000/50-30	
Rating:	700W	1000W	1300W	1600W

Intended use:

An automatic disconnection device with single-phase mains surveillance in accordance with Engineering Recommendation G59/3 for photovoltaic systems with a single-phase parallel coupling via an inverter to the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter.

Applied standards and guidelines:

Engineering Recommendation G59/3-2 Issue 3 Amendment 2 September 2015

Recommendations for the connection of generating plant to the distribution systems of licensed distribution network operators

The safety concept of an aforementioned representative product corresponds at the time of issue of this certificate to the valid safety specifications for the specified use in accordance with regulations.

Report No: 15PP103-03

Certificate No: 17-220-00

Date of issue: 2017-06-20



Andreas Aufmuth
Certification Department



Power Quality. Harmonics.

Generating Unit tested to BS EN 61000-3-2

Multipus Compact 12/2000/80-30

Generating Unit rating per phase (rpp)		1,6	kW			
Harmonic	At 45-55% of rated output		100% of rated output		Limit in BS EN 61000-3-2 in Amps	Higher limit for odd harmonics 21 and above
	Measured Value (MV) in Amps	Normalised Value (NV) in Amps	Measured Value (MV) in Amps	Normalised Value (NV) in Amps		
2	0,16	0,16	0,06	0,06	1,080	
3	0,24	0,24	0,94	0,94	2,300	
4	0,13	0,13	0,05	0,05	0,430	
5	0,08	0,08	0,13	0,13	1,140	
6	0,09	0,09	0,03	0,03	0,300	
7	0,07	0,07	0,04	0,04	0,770	
8	0,06	0,06	0,02	0,02	0,230	
9	0,03	0,03	0,03	0,03	0,400	
10	0,03	0,03	0,01	0,01	0,184	
11	0,01	0,01	0,02	0,02	0,330	
12	0,01	0,01	0,00	0,00	0,153	
13	0,01	0,01	0,02	0,02	0,210	
14	0,01	0,01	0,00	0,00	0,131	
15	0,01	0,01	0,02	0,02	0,150	
16	0,01	0,01	0,00	0,00	0,115	
17	0,00	0,00	0,02	0,02	0,132	
18	0,01	0,01	0,00	0,00	0,102	
19	0,00	0,00	0,01	0,01	0,118	
20	0,00	0,00	0,00	0,00	0,092	
21	0,00	0,00	0,01	0,01	0,107	0,160
22	0,00	0,00	0,00	0,00	0,084	
23	0,01	0,01	0,01	0,01	0,098	0,147
24	0,00	0,00	0,00	0,00	0,077	
25	0,00	0,00	0,01	0,01	0,090	0,135
26	0,00	0,00	0,00	0,00	0,071	
27	0,00	0,00	0,01	0,01	0,083	0,124
28	0,00	0,00	0,00	0,00	0,066	
29	0,00	0,00	0,01	0,01	0,078	0,117
30	0,00	0,00	0,00	0,00	0,061	
31	0,00	0,00	0,01	0,01	0,073	0,109
32	0,00	0,00	0,00	0,00	0,058	
33	0,00	0,00	0,00	0,00	0,068	0,102
34	0,00	0,00	0,00	0,00	0,054	
35	0,00	0,00	0,00	0,00	0,064	0,096
36	0,00	0,00	0,00	0,00	0,051	
37	0,00	0,00	0,01	0,01	0,061	0,091
38	0,00	0,00	0,00	0,00	0,048	
39	0,00	0,00	0,01	0,01	0,058	0,087
40	0,00	0,00	0,00	0,00	0,046	

Multiplus Compact 12/800/35-16

Generating Unit rating per phase (rpp)		1,6	kW			
Harmonic	At 45-55% of rated output		100% of rated output			
	Measured Value (MV) in Amps	Normalised Value (NV) in Amps	Measured Value (MV) in Amps	Normalised Value (NV) in Amps	Limit in BS EN 61000-3-2 in Amps	Higher limit for odd harmonics 21 and above
2	0,02	0,02	0,02	0,02	1,080	
3	0,49	0,49	0,67	0,67	2,300	
4	0,02	0,02	0,02	0,02	0,430	
5	0,11	0,11	0,14	0,14	1,140	
6	0,01	0,01	0,02	0,02	0,300	
7	0,03	0,03	0,04	0,04	0,770	
8	0,01	0,01	0,02	0,02	0,230	
9	0,01	0,01	0,03	0,03	0,400	
10	0,01	0,01	0,01	0,01	0,184	
11	0,01	0,01	0,02	0,02	0,330	
12	0,00	0,00	0,00	0,00	0,153	
13	0,01	0,01	0,01	0,01	0,210	
14	0,00	0,00	0,00	0,00	0,131	
15	0,01	0,01	0,01	0,01	0,150	
16	0,00	0,00	0,00	0,00	0,115	
17	0,01	0,01	0,02	0,02	0,132	
18	0,00	0,00	0,00	0,00	0,102	
19	0,01	0,01	0,01	0,01	0,118	
20	0,00	0,00	0,00	0,00	0,092	
21	0,01	0,01	0,01	0,01	0,107	0,160
22	0,00	0,00	0,00	0,00	0,084	
23	0,00	0,00	0,01	0,01	0,098	0,147
24	0,00	0,00	0,00	0,00	0,077	
25	0,00	0,00	0,01	0,01	0,090	0,135
26	0,00	0,00	0,00	0,00	0,071	
27	0,00	0,00	0,01	0,01	0,083	0,124
28	0,00	0,00	0,00	0,00	0,066	
29	0,00	0,00	0,01	0,01	0,078	0,117
30	0,00	0,00	0,00	0,00	0,061	
31	0,00	0,00	0,00	0,00	0,073	0,109
32	0,00	0,00	0,00	0,00	0,058	
33	0,01	0,01	0,01	0,01	0,068	0,102
34	0,00	0,00	0,00	0,00	0,054	
35	0,00	0,00	0,01	0,01	0,064	0,096
36	0,00	0,00	0,00	0,00	0,051	
37	0,00	0,00	0,01	0,01	0,061	0,091
38	0,00	0,00	0,00	0,00	0,048	
39	0,00	0,00	0,01	0,01	0,058	0,087
40	0,00	0,00	0,00	0,00	0,046	

Power Quality. Voltage fluctuations and flicker

Multiplus Compact 12/2000/80-30

	Starting			Stopping from full load			Running	
	d _{max}	d _c	d _(t)	d _{max}	d _c	d _(t)	P _{st}	P _{It} 2 hours
Measured Values at test impedance	-1,20	-1,17	0,00	1,17	1,12	0,00	0,185	0,185
Normalised to standard impedance	-1,20	-1,17	0,00	1,17	1,12	0,00	0,185	0,185
Normalised to required maximum impedance	N/A							
Limits set under BS EN 61000-3-11	4%	3,3%	3,3%	4%	3,3%	3,3%	1,0	0,65

Multiplus Compact 12/800/35-16

	Starting			Stopping from full load			Running	
	d _{max}	d _c	d _(t)	d _{max}	d _c	d _(t)	P _{st}	P _{It} 2 hours
Measured Values at test impedance	0,53	0,50	0,00	-0,53	-0,37	0,00	0,187	0,187
Normalised to standard impedance	0,53	0,50	0,00	-0,53	-0,37	0,00	0,187	0,187
Normalised to required maximum impedance	N/A							
Limits set under BS EN 61000-3-11	4%	3,3%	3,3%	4%	3,3%	3,3%	1,0	0,65

Test impedance	R	0,24	Ω	XI	0,15	Ω
Standard impedance	R	0,24* 0,4^	Ω	XI	0,15* 0,25^	Ω
Maximum impedance	R	N/A	Ω	XI	N/A	Ω

Power Quality. Power factor.

	216,2V	230V	253V	Measured at three voltage levels and at full output. Voltage to be maintained within + or - 1,5% of the stated level during test.
Measured Value	0,990	0,984	0,980	
Limit	>0,95	>0,95	>0,95	

Protection. Frequency tests

Function	Setting		Trip test		"No trip tests"	
	Frequency	Time delay	Frequency	Time delay	Frequency / time	Confirm no trip
U/F stage 1	47,5Hz	20,0s	47,47Hz	20,1s	47,7Hz 25s	No trip
U/F stage 2	47,0Hz	0,5s	46,99Hz	0,57s	47,2Hz 19,98s	No trip
					46,8Hz 0,48s	No trip
O/F stage 1	51,5Hz	90,0s	51,53Hz	90,1s	51,3Hz 95s	No trip
O/F stage 2	52,0Hz	0,5s	52,01Hz	0,61s	51,8Hz 89,98s	No trip
					52,2Hz 0,48s	No trip

Protection. Voltage tests

Function	Setting		Trip test		"No trip tests"	
	Voltage	Time delay	Voltage	Time delay	Voltage / time	Confirm no trip
U/V stage 1	200,1V	2,5s	199,9V	2,58s	204,1V 3,5s	No trip
U/V stage 2	184,0V	0,5s	183,8V	0,58s	188,0V 2,48s	No trip
					180,0V 0,48s	No trip
O/V stage 1	262,2V	1,0s	264,1V	1,09s	258,2V 2,0s	No trip
O/V stage 2	273,7V	0,5s	275,6V	0,61s	269,7V 0,98s	No trip
					277,7V 0,48s	No trip

a) Protection. Loss of Mains test and single phase test

Note as an alternative, inverters can be tested to BS EN 62116. The following sub set of tests should be recorded in the following table.

Test power and imbalance	33% -5% Q Tests 22	66% -5% Q Test 12	100% -5% P Test 5	33% +5% Q Test 31	66% +5% Q Test 21	100% +5% P Test 10
Trip time. Limit is 0.5s	0,12s	0,11s	0,17s	0,15s	0,10s	0,17s

Single phase test for multi phase **Generating Units**. Confirm that when generating in parallel with a network operating at around 50Hz with no network disturbance, that the removal of a single phase connection to the **Generating Unit**, with the remaining phases connected causes a disconnection of the generating unit within a maximum of 1s.

Ph 1 removed	Confirm trip	Ph 2 removed	Confirm trip	Ph 3 removed	Confirm trip
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b) Protection. Frequency change, Stability test.

	Start frequency	Change	End frequency	Confirm no trip
Positive vector shift	49,5Hz	+9 degrees		No trip
Negative vector shift	50,5Hz	-9 degrees		No trip
Positive frequency drift	49,5Hz	+0,19Hz/sec	51,5Hz	No trip
Negative frequency drift	50,5Hz	-0,19Hz/sec	47,5Hz	No trip

c) Protection. Re-connection timer.

Time delay settings (s)	Measured delay (s)	Checks on no reconnection when voltage or frequency is brought to just outside stage 1 limits of table 10.5.7.1			
		At 266,2V	At 196,1V	At 47,4Hz	At 51,6Hz
Confirmation that the Generating Unit does not re-connect		No Re-connection	No Re-connection	No Re-connection	No Re-connection

d) Fault Level contribution.

For machines with electro-magnetic output			For inverter output		
Parameter	Symbol	Value	Time after fault	Volts	Amps
Peak Short Circuit current	i_p	-	20ms	105,57	8,02
Initial Value of aperiodic current	A	-	100ms	74,06	0,06
Initial symmetrical short-circuit current	I_k	-	250ms	74,08	0,04
Decaying (aperiodic) component of short-circuit current	i_{DC}	-	500ms	74,15	0,06
Reactance/Resistance Ratio of source	X/R	-	Time to trip	0,032	In seconds

e) Self Monitoring solid state switching.

It has been verified that in the event of the solid state switching device failing to disconnect the Generating Plant, the voltage on the output side of the switching device is reduced to a value below 50 volt within 0,5s.

**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*10R06/02*3380*01

1. Make (trade name of manufacturer) : Victron Energy B.V.
2. Type and general commercial description(s) : Inverter/(Charger), type:
: Multiplus C 12V/????/?? 16-230V VE.Bus
Inverter C 12/???? 230V VE.Bus
3. Means of identification of type, if marked on the ~~vehicle/component~~/ separate technical unit⁽¹⁾ :
 - MultiPlus C 12/1600/70-16 230V VE.Bus
 - Multiplus C 12/1200/50-16 230V VE.Bus
 - Multiplus C12/800/35-16 230V VE.Bus
 - Inverter C 12/1600 230V VE.Bus
 - Inverter C 12/1200 230V VE.Bus
- 3.1. Location of that marking : Label on top of the housing
4. Category of vehicle : All
5. Name and address of manufacturer : Victron Energy B.V.
De Paal 35
1351 JG Almere
The Netherlands
6. In the case of components and separate technical units, location and method of affixing of the approval mark : Screen Printing on top of the housing
7. Address(es) of assembly plant(s) _____

Approval number: E4*10R06/02*3380*01

8. Additional information (where applicable) : see Appendix below
9. Technical service responsible for carrying out the tests : TÜV Rheinland Nederland B.V.
: Eiberkamp 10
9351 VT Leek
The Netherlands
10. Date of test report : 03-08-2023
11. Number of test report : NL23DA6F 001
12. Remarks (if any) : see Appendix
13. Place : Zoetermeer
14. Date : 07 September 2023
15. Signature : 
R. F. R. Clement
16. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.
17. Reasons for extension : Design and documentation update including update to ECE revision 10R-06.
Change of assembly plant.
Change of name: "Phoenix" left out

⁽¹⁾ Strike out what does not apply.

APPENDIX

to type-approval communication form number: E4*10R06/02*3380*01

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

1. Additional information :
 - 1.1. Electrical system rated voltage : 12/24 V pos./neg. ground⁽¹⁾
 - 1.2. This ESA can be used on any vehicle type with the following restrictions : None
 - 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 : ESA is Not Safety Related. Radiated Immunity Tests not applicable
 - 1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests : TÜV Rheinland Nederland B.V.
Eiberkamp 10
9351 VT Leek
: The Netherlands
2. Remarks : Valid for left-hand drive and right hand drive vehicles
Attached to this Type Approval:
Application form
1 Annex 2B form
Statement manufacturer and authorization regarding application
1 EMC Testreport
Product description
Photo's
BOM's
Schematic Diagram
PCB Layout
Declaration of name change
Declaration of equality

⁽¹⁾ Strike out what does not apply.

