ACEG vzw
Erkend keuringsorganisme

Ringlaan 39
1853 - Strombeek-Bever
tel. +32 2 880 88 90
info@aceg.be
www.aceg.be

BELAC 522-INSP
ISO/IEC 17020

Keuringsverslag van een elektrische laagspanning- en zeer lage spanningsinstallatie

CONFORM

Datum keuring: 27/11/2023 **Inspecteur:** Ruben Van Doesselaere **Mentor:** **Installateur:** Insaver

ID-label: **Klantreferentie:**

B T.W nr.:BE 0848 444 746

Merk en type meettoestel: Metrel MI 3102 BT Serienummer: 23162215

Datum verslag: 27/11/2023

Plaats van het onderzoek

Straatnaam	Eikenlaan
Huisnummer	43
Busnummer	
Postcode	8790
Gemeente	Waregem
Land	België

Eigenaar

Naam	Callens Greta
Straatnaam	Eikenlaan
Huisnummer	43
Busnummer	
Postcode	8790
Gemeente	Waregem
Land	België

Installateur

Naam	Insaver
BTW nr	BE 0848 444 746
Telefoonnummer	+32 11 81 20 88
E-mail	administratie@insaver.be

Type : PV-installatie en/of thuisbatterij **EAN** : 541448820070340202 **Teller Nr.:** : 1SAG3100760529

Afbeelding schakel- en verdeelbord:

Aard onderzoek: Gelijkvormigheidscontrole van een PV installatie ≤ 10 kVA en/of thuisbatterij volgens (KB 08/09/2019) - AREI Boek 1- 6 4 en 4 2 4 3 en 7 112. en synergrid C10/11.

Is de installatie aangevat voor 01/06/2023? Nee

Netbeheerder: FLUVIUS Spanning: 3N400V Meter / bord verbinding: 10 mm² Max beveiliging: 16 A

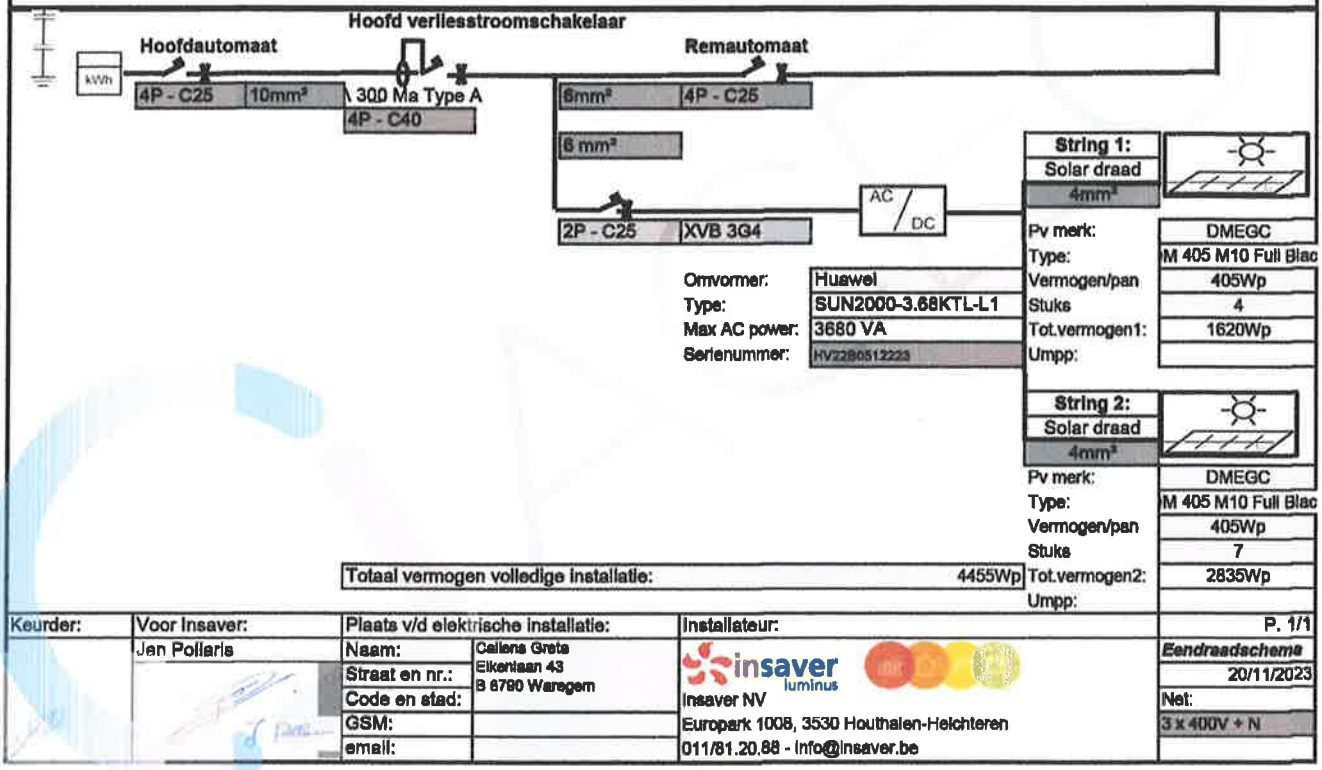
Aantal borden: 1 Aantal kringen: 2

Aardelektrode: Aardingslus

Ri algemeen: 13.62 MΩ RE: 5.94 Ω

OK OK

Bestaande installatie



Omvormer:	Huawei
Type:	SUN2000-3.68KTL-L1
Max AC power:	3680 VA
Serienummer:	HV2280512223

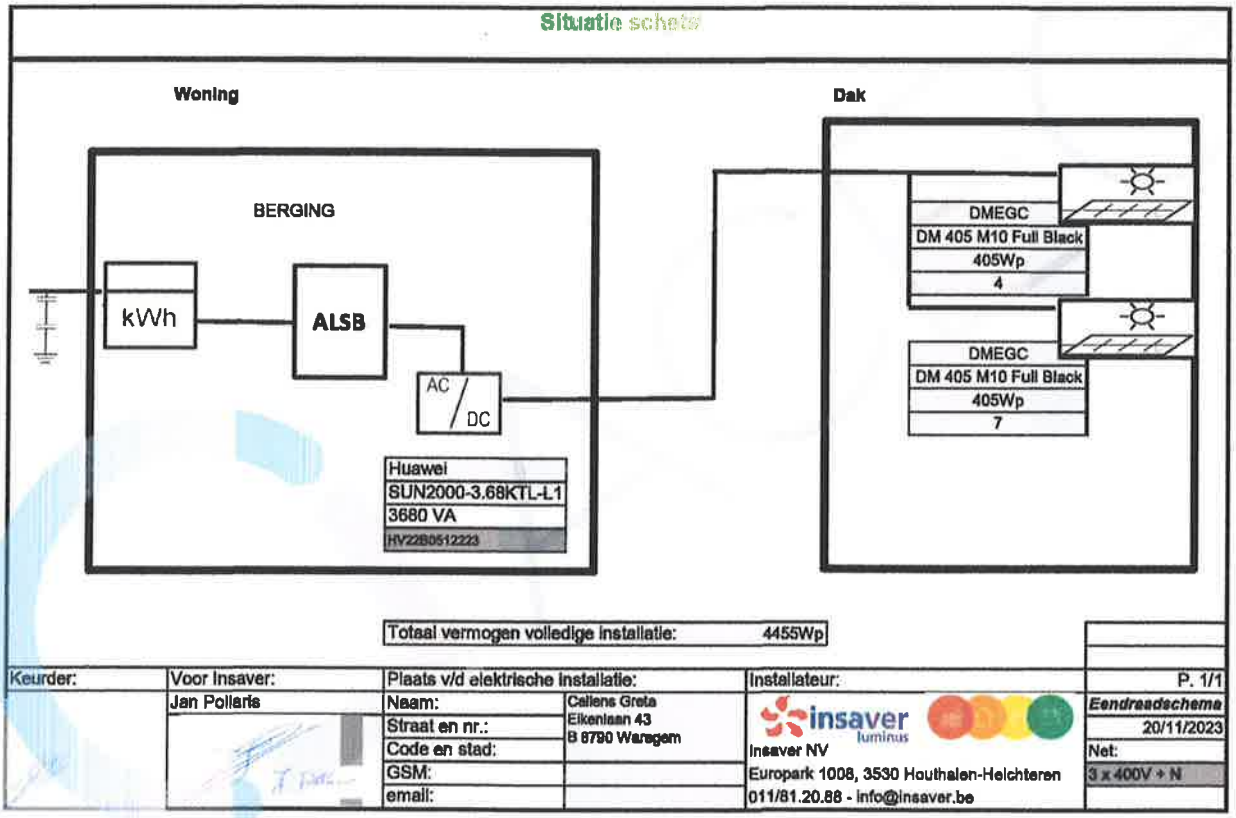
String 1:	
Pv merk:	DMEGC
Type:	M 405 M10 Full Blac
Vermogen/pan	405Wp
Stuks	4
Tot.vermogen1:	1620Wp
Umpp:	

String 2:	
Pv merk:	DMEGC
Type:	M 405 M10 Full Blac
Vermogen/pan	405Wp
Stuks	7
Tot.vermogen2:	2835Wp
Umpp:	

Totaal vermogen volledige installatie: 4455Wp

Keurder:	Voor Insaver:	Plaats v/d elektrische installatie:		Installateur:	P. 1/1
	Jan Pollaris	Naam:	Callens Greta	insaver luminus	*Eendraadscheme*
		Straat en nr.:	Elkenlaan 43		20/11/2023
		Code en stad:	B 8790 Waregem	Insaver NV	Net:
		GSM:		Europark 1008, 3530 Houthalen-Helchteren	3 x 400V + N
		email:		011/81.20.88 - info@insaver.be	

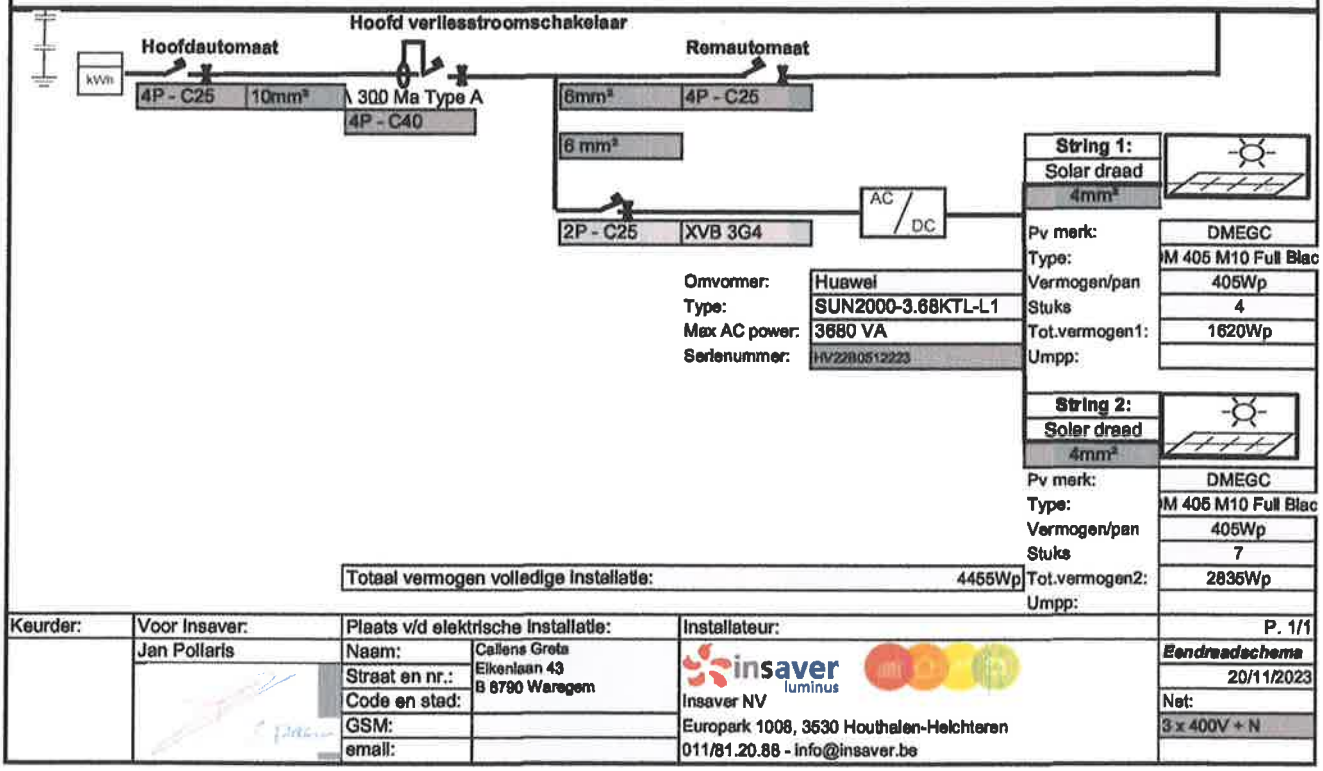
Situatie schets



Totaal vermogen volledige installatie:	4455Wp

Keurder:	Voor Insaver:	Plaats v/d elektrische installatie:		Installateur:	P. 1/1
	Jan Pollaris	Naam:	Callens Greta	insaver luminus	*Eindreadscheme*
		Straat en nr.:	Eikenlaan 43		20/11/2023
		Code en stad:	B 8790 Waregem	Insaver NV	Net:
		GSM:		Europark 1008, 3530 Houthalen-Helchteren	3 x 400V + N
		email:		011/81.20.88 - info@insaver.be	

Bestaande installatie



Keurder:	Voor Insaver:	Plaats v/d elektrische installatie:		Installateur:	P. 1/1
	Jan Pollaris	Naam:	Callens Greta	insaver luminus	*Eendraadschema*
		Straat en nr.:	Eikenlaan 43		20/11/2023
		Code en stad:	B 9790 Waregem	Insaver NV	Net:
		GSM:		Europark 1008, 3530 Houthalen-Helchteren	3 x 400V + N
		email:		011/81.20.88 - info@insaver.be	

POWER-GENERATING UNITS TO BE HOMOLOGATED FOR LIST C10/26 ACCORDING TO THE REQUIREMENTS OF ANNEX D OF THE TECHNICAL PRESCRIPTION C10/11 ed2.1 (01/09/2019)

2. C10/26 list with power-generating units in accordance with annex D of C10/11 ed2.1 (01/09/2019)

GLV 223-1 Ø	HUAWEI	SUN2000-2KTL-L1	

checklist ed 2.1.2 (12/2019)

1	2	3	4	5	6	7	8	9	10	11						12				13						14	15
					ONLY for units (suitable for) energy storage Name and reference of the power control system		POWER			ADDITIONAL CHARACTERISTICS						LIMITATIONS				APPLICATION						Synergrid approval date	
SYNERGRID reference number (GLVxxx-yy-zzzz)	BRAND NAME	Name of the product SERIES	REFERENCE of the model / type of the unit	FIRMWARE VERSION	power control system type EnFluRi	other power control system	P_{nc}: rated (active) power (W)	S_{max} maximum apparent power (VA)	1-phase or 3-phase	D 3 integrated automatic separation system	( ) "RfG type B ready" = suitable for use in installation ≥ 1MW	D 4 1 additional operating frequency range (51.5 Hz - 52.5 Hz)	D 6 2 power response to underfrequency	D 7 2 active power reduction P(U)	E compliant power control system provided (e.g. EnFluRi)	D 7 1 only homologated for "small power-generating installations"	D 4 3 only homologated for connection to HV-network	D 9 1 only homologated for use in module < 800W	( ) only homologated as a backup power system according to §2.1.1	Solar energy	Wind energy	CHP (combined heat & power)	Energy storage	Backup power system	Other	Temporary homologation (expires on 01/05/2020)	Final homologation
	HUAWEI	SUN2000	2KTL-L1	V200R001	Smart Power Sensor DDSU666-H		2000	2200	1-phase	X		X	X	X		X				X			X	X			
	HUAWEI	SUN2000	3KTL-L1	V200R001	Smart Power Sensor DDSU666-H		3000	3300	1-phase	X		X	X	X		X				X			X	X			
	HUAWEI	SUN2000	3,68KTL-L1	V200R001	Smart Power Sensor DDSU666-H		3680	3680	1-phase	X		X	X	X		X				X			X	X			
	HUAWEI	SUN2000	4KTL-L1	V200R001	Smart Power Sensor DDSU666-H		4000	4400	1-phase	X		X	X	X		X				X			X	X			
	HUAWEI	SUN2000	4,6KTL-L1	V200R001	Smart Power Sensor DDSU666-H		4600	5000	1-phase	X		X	X	X		X				X			X	X			
	HUAWEI	SUN2000	5KTL-L1	V200R001	Smart Power Sensor DDSU666-H		5000	5500	1-phase	X		X	X	X		X				X			X	X			

SYNERGRID a.s.b.l.-v.z.w.
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BE-1000 Bruxelles/Brussel
T.V.A./B.T.W. / BE 0402.958.091

EXPLANATIONS FOR THE COMPLETION OF THE TABLE

Column	Title	Remarks
1	SYNERGRID reference number (GLVxxx-yy-zzzz)	In the case of a positive homologation, each C10/26-homologated power-generating unit is given a unique Synergrid reference number: xxx = unique reference of the manufacturer yy = serial number of manufacturer xxx's record xxx zzzz = unique unit reference for the manufacturer xxx Note : "GLV" is the internal Synergrid-abbreviation for Declaration of Conformity, based on the Dutch word "Gelijkvormigheidsverklaring"
2	Brand name	Brand name under which the unit is marketed on the Belgian market.
3	Name of the product series	Name of the product range. Note: For each separate product range (or each group of units with common characteristics) a separate checklist according to Appendix D is required (sheet 3) together with the corresponding conformity proof documents.
4	Reference of the model / type of the unit	Unique product name or reference. Units of the same product range must be unequivocally distinguished from each other through this name or reference
5	Firmware version	Reference of the firmware version of the unit
6	power control system type EnFluRi	This case is only applicable for units (suitable for) energy storage, provided with a power control system of type EnFluRi. Name and reference of the power control system of type EnFluRi, compliant to the requirements in C10/11 ed2.1 (01/09/2019) §4.1.7 and §7.11.2.1

FINAL HOMOLOGATION

7	other power control system	This case is only applicable for units (suitable for) energy storage, provided with a power control system of another type than 7a/7b: Name and reference of the power control system, compliant to the requirements in C10/11 ed2.1 (01/09/2019) 67.11.2.2
8	P_{ac}, rated (active) power (W)	Active (electrical) power in W at the terminals of the unit, as stated on the technical sheet / data sheet / brochure and nameplate (For photovoltaic inverters: see also definition in §3.2.5 of IEC 62894:2016-11)
9	Smax - maximum apparent power (VA)	Maximum apparent (electrical) power at the terminals of the unit, as stated on the certificate / the test report / the technical sheet / data sheet / brochure.
10	1-phase or 3-phase	Indicate whether the unit is single- or three-phase. This characteristic refers to the unit itself, not to the nature of the connection to the distribution network to which the unit can be connected.
11	Additional characteristics	In these columns optional additional characteristics of the units are indicated, following the information in checklist annex D and the corresponding technical file Put an "X" at each relevant additional characteristic. Note: Only units < 1 MW that are "type B ready" may be applied in an installation ≥ 1 MW (installation "type B" according to the European Network Code RfG). A unit < 1 MW is only "type B ready" if it complies with all optional properties ticked in column I of the checklist Annex D.
12	Limitations	These columns specify limitations of the units to their application in certain types of installations, in accordance with the information in the checklist in annex D and the corresponding technical file. Put an "X" to each relevant limitation
13	Application	Indicate the applications for which the unit is suitable. Include an "X" with each application for which the unit can be used.
14	Synergrid approval date Temporary homologation (expires on 01/05/2020)	Date on which the submitted homologation file was approved by Synergrid for a limited period of time - A temporary homologation is granted if the applicant invokes exceptions in chapter 3 of C10/11 ed2.1 (01/09/2019) and has not yet submitted all the test reports required for a definitive homologation with his homologation application (exception 3), or if the units do not yet have all the required properties (exceptions 1 and 2) - The expiry date for a temporary homologation is 01/05/2020 - see conditions in chapter 3 of C10/11 ed 2.1 (01/09/2019).
15	Synergrid approval date Final homologation	Date on which the submitted homologation file was definitely approved by Synergrid - A final approval will be granted as soon as Synergrid has a fully compliant homologation dossier - A final homologation only remains valid under the following conditions: - No changes that have an influence on the initial approval are made to (the production of) the units. - There is no new edition of prescription C10/11. - The validity date of the test reports in the technical file submitted for approval has not been exceeded. See also the general Synergrid procedure S1/01 for homologation of material, which is applicable. (1)

(1) - S1/01 Technical specification: procedure for application for homologation and renewal of homologation of materials

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BE-1000 Bruxelles/Brussel
T.V.A./B.T.W.: BE 0422.958.091

FINAL HOMOLOGATION

Huawei Technologies Netherlands B.V.

GLV 073-10	HUAWEI	SUN2000-2KTL-L1

C10/26 - DECLARATION OF CONFORMITY for power-generating units
GLV ed2.1.2 (12/2019)

for the application of annex D "Technical basic requirements regarding the power-generation units" of the Synergrid prescription C10/11 ed2.1 (01/09/2019)

Synergrid

The undersigned,	Manufacturer:	Huawei Technologies (Netherlands) B.V	Represented by:	Mustafa Temur
	Address:	Herikerbergweg 36, 1101CM	Country:	Belgium
		Amsterdam Zuid-Oost, The Netherland	email.	mustafa.temur1@huawei.com
			Telephone:	0032 475826664

Hereby declares that each production unit completed in the list in tab 'list of power-generating units' of this homologation application complies with the following conditions:

1. The power-generating unit complies with the relevant requirements set out in annex D "Technical basic requirements regarding the power-generation units" of the Synergrid prescription C10/11 ed2.1 (01/09/2019).

2. In order to substantiate this, a separate technical file has been submitted at least for each separate product series of the 'C10/26 list of power-generating units' of this homologation application. Each technical file shall be drawn up on the basis of a checklist Annex D, duly and correctly completed by the manufacturer, accompanied by all the required proof of conformity.

2.1 For technical requirements for which the required proof of conformity (column J in checklist annex D) is a declaration of honour by the manufacturer, the manufacturer declares by signing and dating this declaration of conformity the correctness of the information (conform / not conform / not applicable) provided by him or her in columns K, L and M of this checklist.

2.2. For technical requirements for which the required proof of conformity (column J in checklist Annex D) is a test report or a certificate, the necessary test reports and/or certificates are available * in the technical file:

- Certificates have been issued by an EN 45011 (or ISO 17065:2012) certification body accredited for these materials.
- Test reports have been established by an ISO 17025:2005 or ISO 17065:2012 laboratory accredited for these tests.

2.3 A list of the document references or the certificates of conformity referred to in the checklist Annex D is also available in the technical file.

Done at:	(location)	Amsterdam	Homologated by Synergrid on:	28/05/2020
On:	(date)	27-5-2020	Stamp Synergrid & signature:	
(stamp manufacturer & signature)				

SYNERGRID a.s.b.l.-v.z.w.
Ravensteingalerij 4/2
1000 Brussel/Bruxelles
BTW 0402.966.091

* Transition period till 01/05/2020 (see exceptions in chapter 3 of C10/11 ed 2.1 (01/09/2019)):

FINAL HOMOLOGATION

Final homologation on 28/5/2020, correction Enflura on 03/5/2021

If at the time of submission of this homologation application it is not yet possible to submit all the necessary certificates and/or test reports (exception 3), or that the units do not yet have all the required characteristics (exceptions 1 and 2), a **temporary homologation** may be granted. All necessary certificates and/or test reports must be in the possession of Synergrid at the latest on 30/04/2020 in order to obtain a final homologation. if this is not the case, the temporary C10/26 homologation will be withdrawn.

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FINAL
HOMOLOGATION

DIFFERENTIEELSTROOMINRICHTING

IΔ (mA)	In (A)	In - andere (A)	I²t	Type	Beveiligde kringen	Test	x 2,5
300	40		22,5kA2s (3000A)	A	2	OK	OK

BESCHRIJVING INSTALLATIE

Aantal kringen	Curve	Bescherming IN (A)	(andere)	P	Sectie (mm²)
Rem	C	25		4	6
Pv	C	25		2	4

Visueel nazicht (algemeen)	OK	**Directe aanraking**	OK	**Indirecte aanraking**	OK
Aansluitingen	OK	**schema in bijlage door Aceg vzw**	NA		
Equipotentiale verbindingen	OK	**Doorsnede geleiders**	OK		
Continuiteit	OK	**Verlichting / toestellen**	NVT	**Eilandwerking**	OK

GROENE METER

Fase	Serie Nr	Meterstand	CE markering	MID markering

OMVORMER

Aantal: 1

Merk: HUAWEI	**Serie:** SUN2000	**Type:** 3,68KTL-L1	**Aansluitingen:** 1-phase
Serienummer: HV22B0512223	**Smax (VA):** 3680	**I AC - nom (A):** 16	**Geschik voor batterij opslag:** Ja
Curve: C	**IN (A):** 25	**UDC Max > UDC panelen/string:** OK	**IDC Max > I str1 + Istr2 + ...:** OK

FOTOVOLTAISCHE ZONNEPANELEN

Aantal	Merk	Type	Piekvermogen per stuk (Wp)	Totaal Piekvermogen (Wp)
11	Dmegc	M10 full black	405	4455

THUISBATTERIJ

OPMERKINGEN - INBREUKEN - NOTA'S

nota/note 2 Geen inbreuken vastgesteld.

nota/note 6 Deze controle omvat enkel de PV-installatie.

BESLUIT

☑ **De elektrische installatie voldoet aan de voorschriften van het KB 08/09/2019 - AREI Boek 1.** Het volgende controlebezoek is te voorzien voor 27/11/2048

☑ De nodige maatregelen werden genomen, zodat de ingangsklemmen van de automatische differentieelstroominrichting, geplaatst aan het begin van de installatie ontoegankelijk zijn gemaakt door verzegeling.

☑ Het (de) eendraadsschema(s) en het (de) situatieplan(nen) werd(en) door het erkend organisme voor gezien getekend.

Deze pdf-versie van het keuringsverslag is de originele versie en mag worden verspreid..

Aantal bijlage(n): 10

AFGIFTE VAN HET KEURINGSVERSLAG

De Inspecteur Ruben Van Doesselaere

Plichten van de eigenaar, beheerder, huurder voor de installatie onderworpen aan het AREI Boek 1 afdeling 9.1.2.

- Het verslag dient te worden bewaard in het dossier van de elektrische installatie.
- Elke wijziging dient te worden vermeld in het elektrisch dossier.

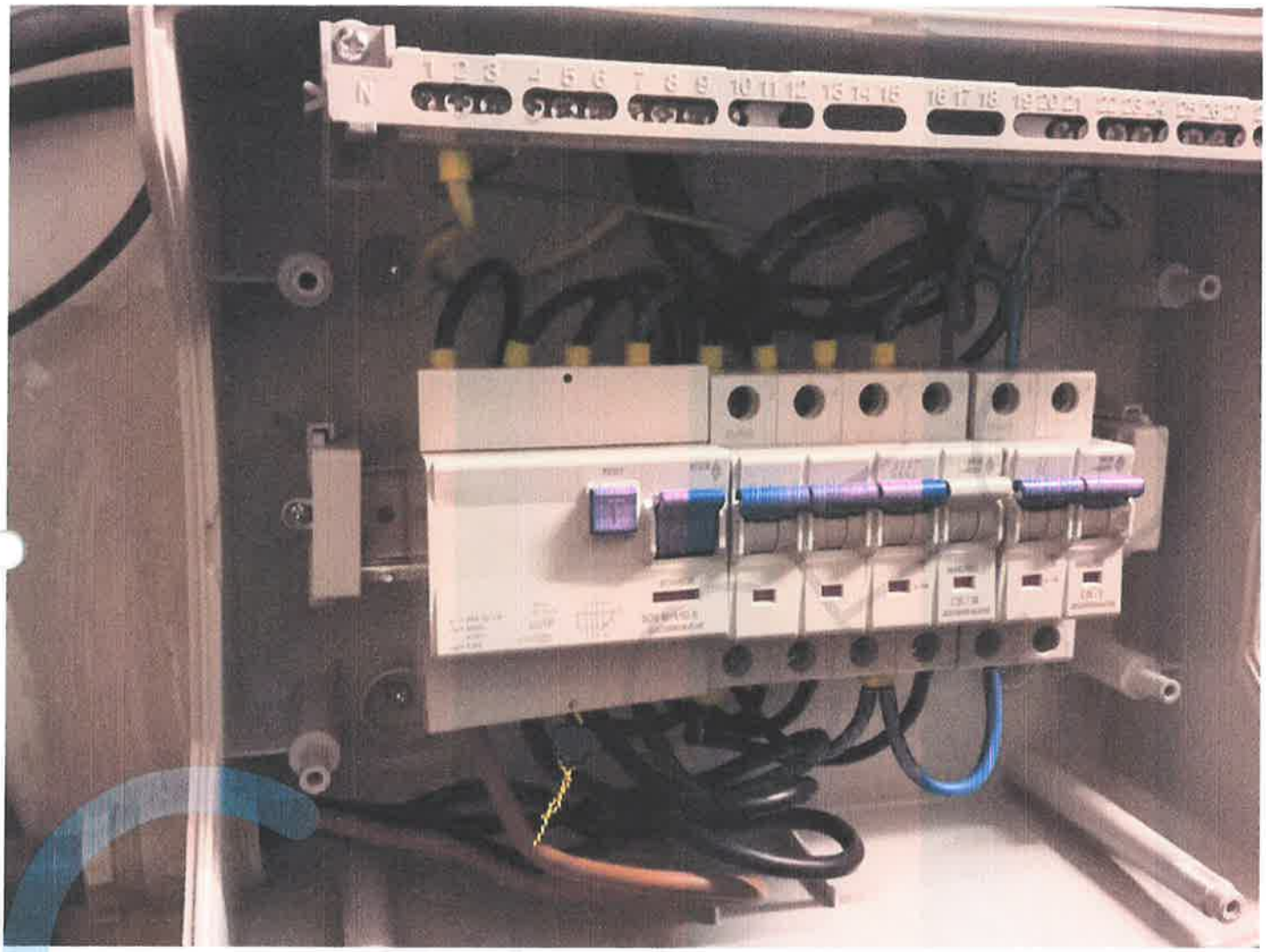
- Elk ongeval overkomen van personen en te wijten, rechtsreeks of onrechtstreeks, aan de aanwezigheid van de elektrische installatie dient onmiddellijk meegedeeld te worden aan de algemene Directie Energie van de Federale Overheidsdienst Economie.

Kwaliteit

- De reproductie van dit document is enkel toegelaten in zijn integrale vorm en enkel met het schriftelijk akkoord van het controleorganisme en de aanvrager.
- De keuring beperkt zich tot de zichtbare en normaal toegankelijke delen van de installatie.

Voor vragen of algemene voorwaarden verwijzen wij graag naar www.aceg.be BE53 0689 0209 2953 | BTW BE0839.866.481

Stappenplan voor een installatie die conform is:			
Stap 1	**Stap 2**	**Stap 3**	**Stap 4**
Lees dit proces-verbaal zorgvuldig en besteed aandacht aan de eventuele nota's	Als u grote wijzigingen of uitbreidingen aan de installatie aanbrengt, moet u deze laten controleren.	De volgende periodieke keuring is voorzien voor 27/11/2048	ACEG staat tot uw dienst voor alle noodzakelijke keuringen.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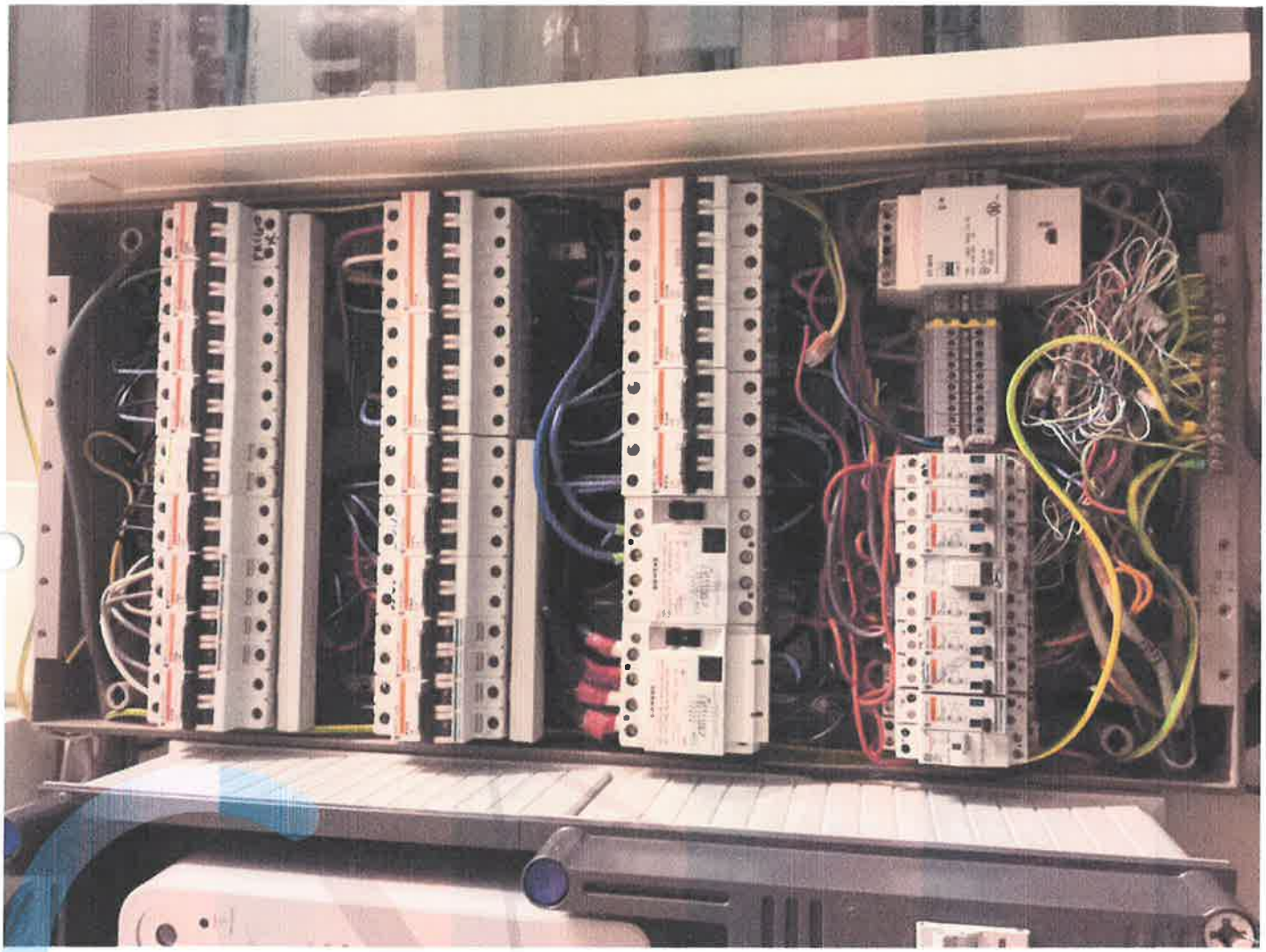
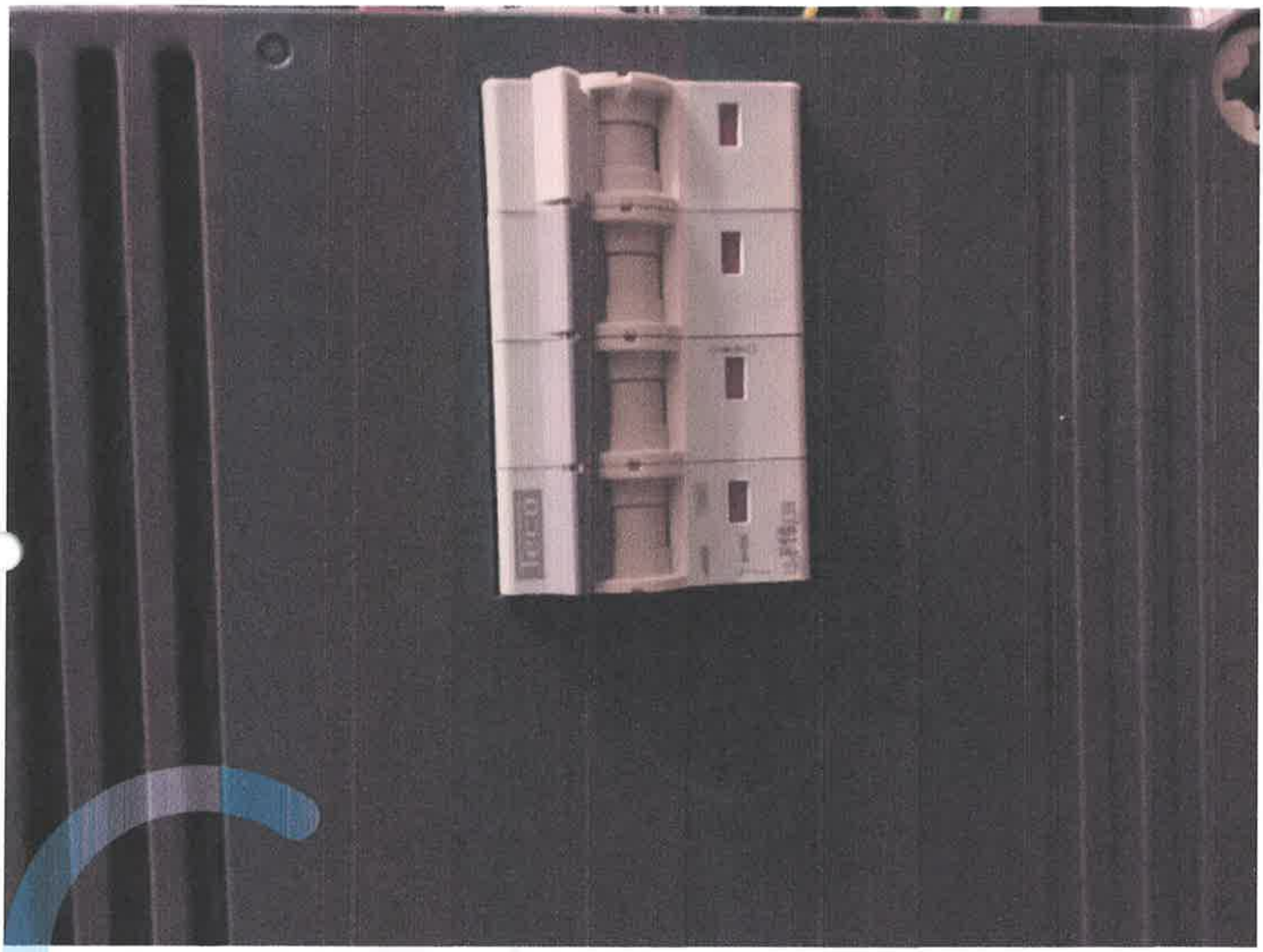
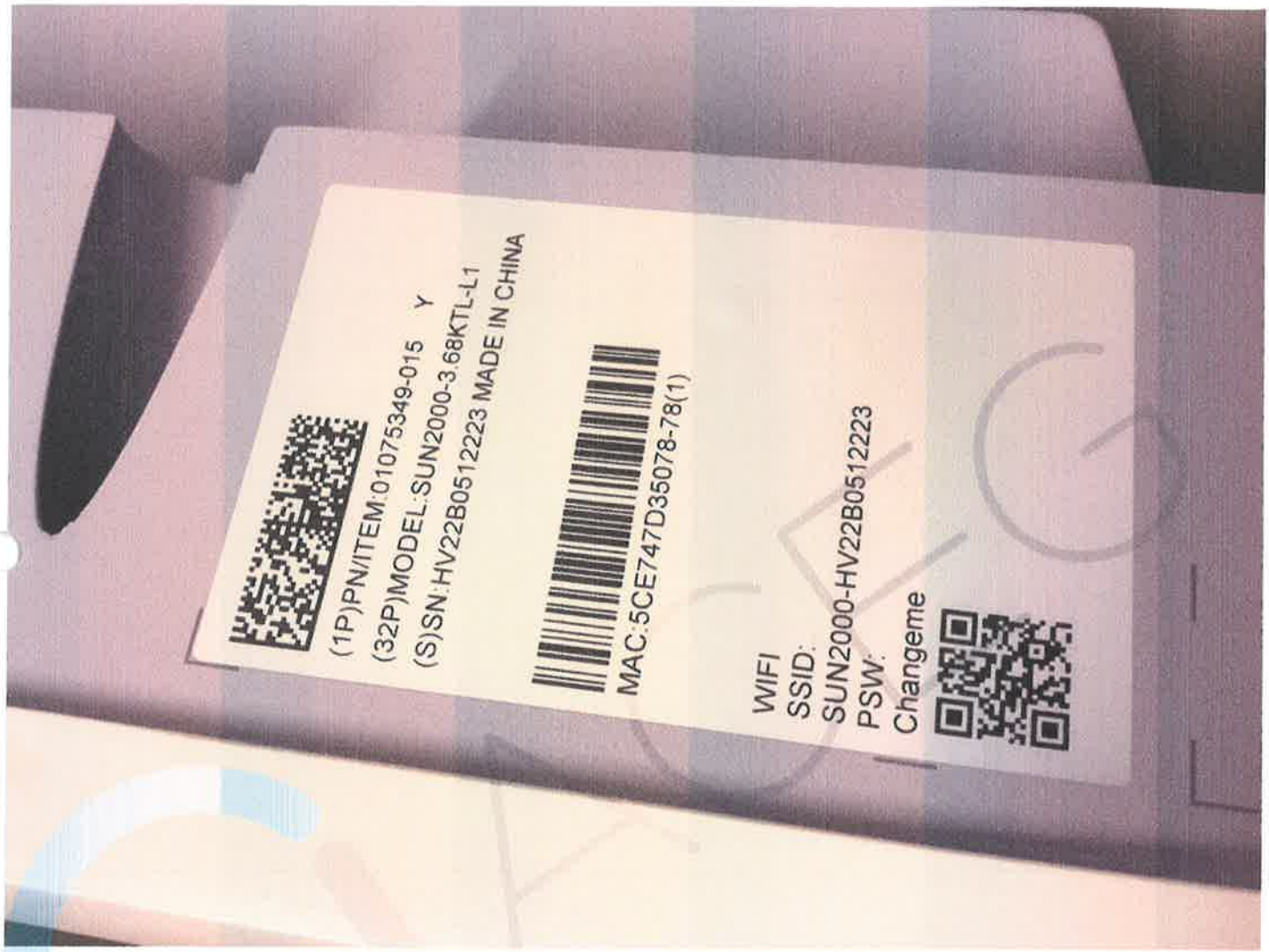
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

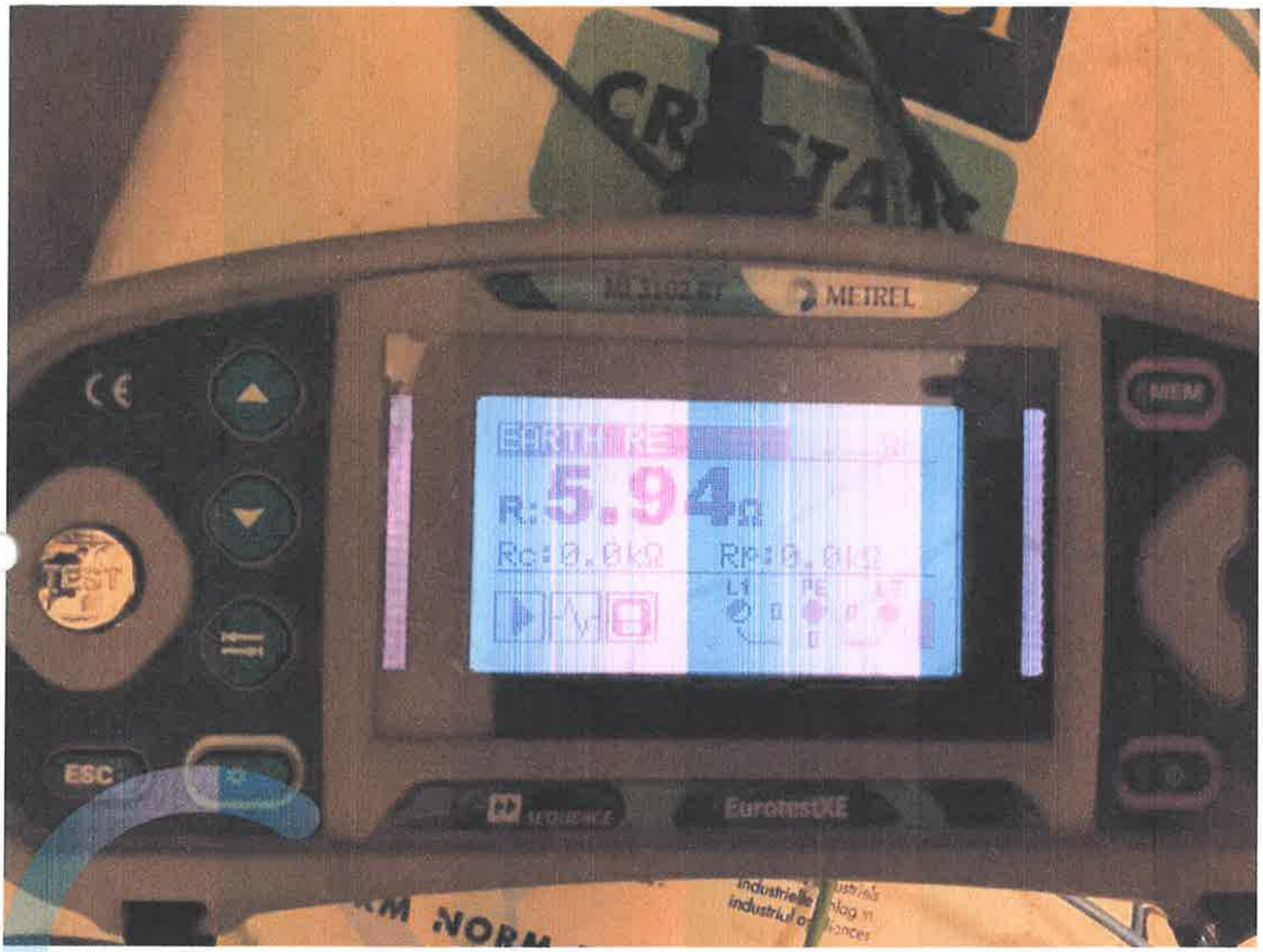


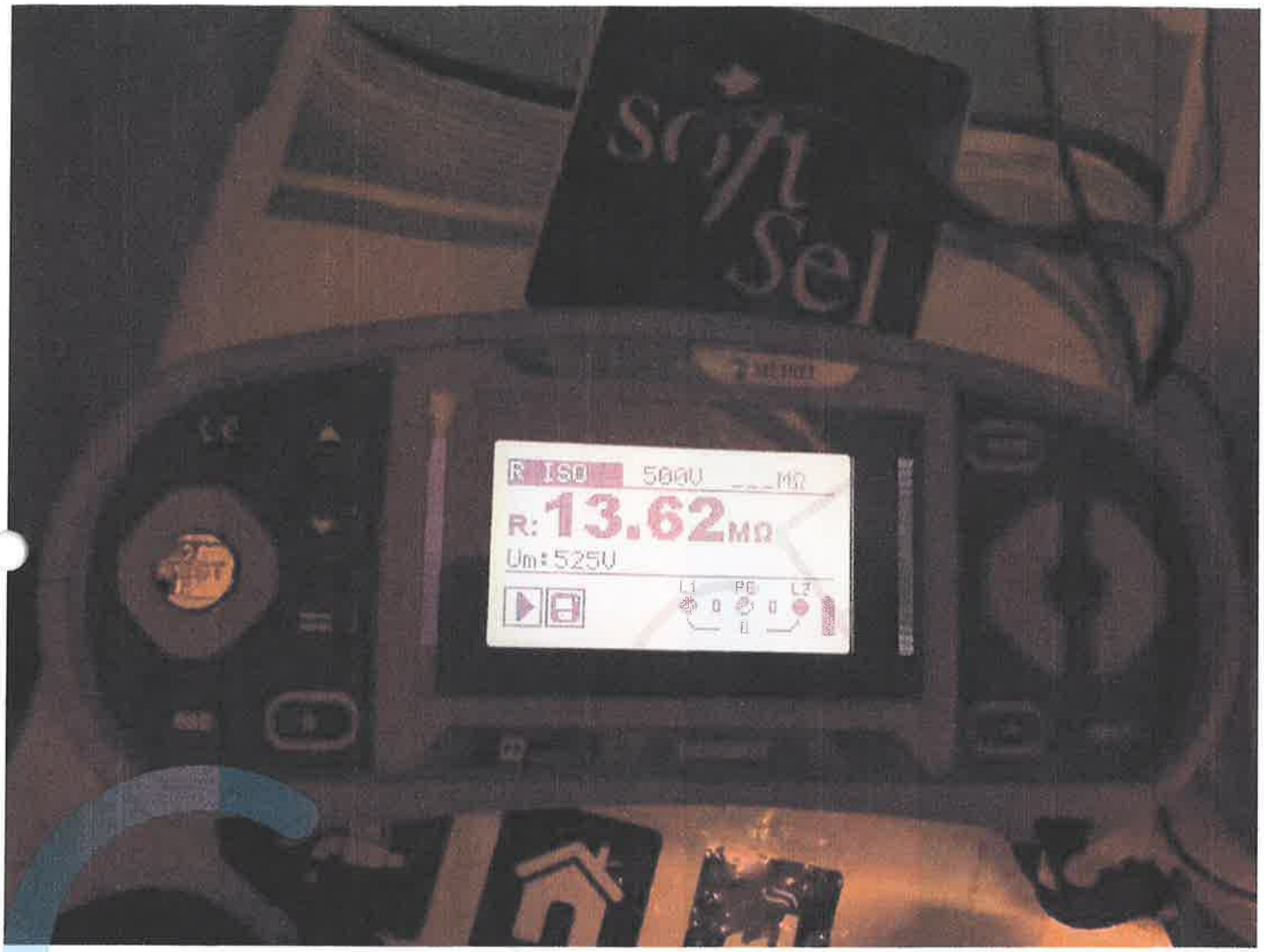



SICONIA
LTE NB1
wM-BUS
eqims
EAN 541 448 820 070 340 202

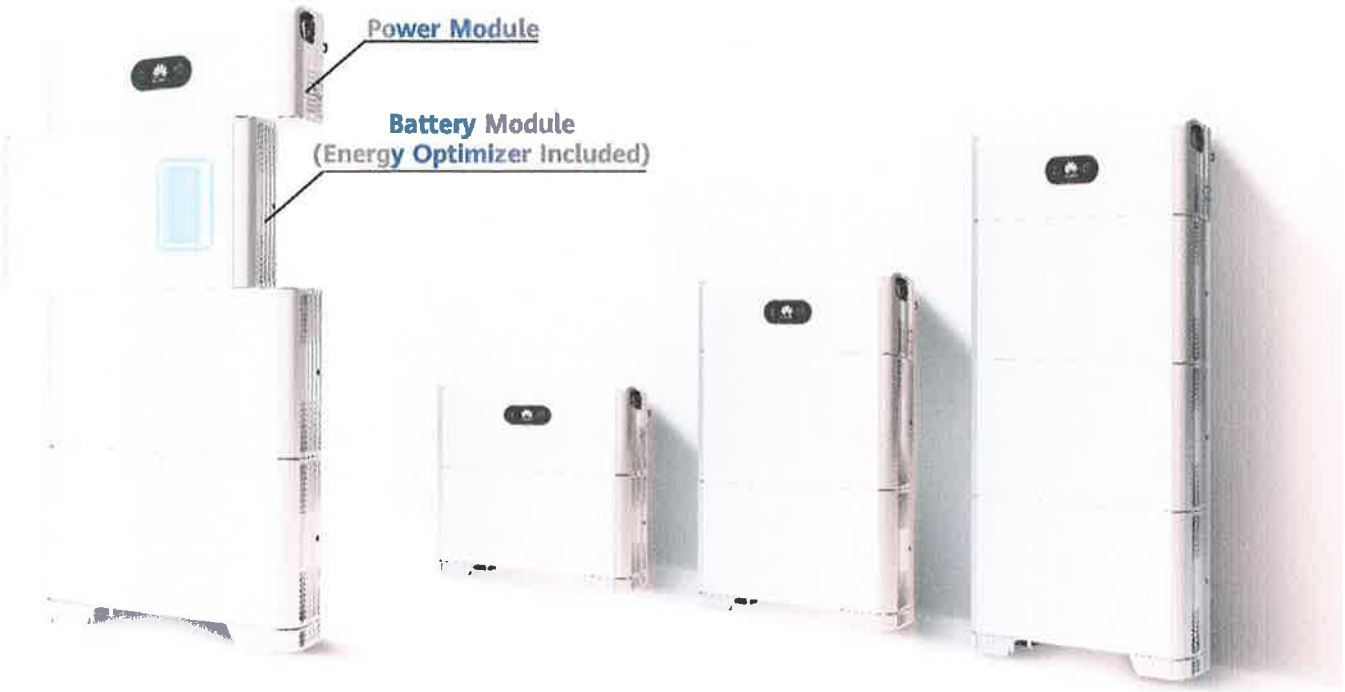

(1P)PN/ITEM:01075349-015
(32P)MODEL:SUN2000-3.68KTL-L1
(S)SN:HV22B0512223 MADE IN CHINA
MAC:5CE747D35078-78(1)
WIFI
SSID:
SUN2000-HV22B0512223
PSW:
Changeme


insaver


METREL
R:5.94Ω
Rc:0.0kΩ
Rp:0.0kΩ
L1
PE
ESC
TEST
SEQUENCE
EurotestXE


R ISO 500V MΩ
R: 13.62MΩ
Um:525V
L1 PE L2

Smart String Battery



More Usable Energy

100% Depth of Discharge
Pack Level Energy Optimization

Flexible Investment

5kWh Modular Design,
Scalable from 5 to 30 kWh

Safe & Reliable

Lithium Iron Phosphate (LFP) Cell

Easy Installation

12 kg Power Module
50 kg Battery Module

Quick Commissioning

Automatically Detected in App

Perfect Compatibility

Compatible to Both Residential
Single & Three Phase Inverter

Technical Specification

	LUNA2000-5-S0	LUNA2000-10-S0	LUNA2000-15-S0
			

Performance

Power module		LUNA2000-5KW-C0	
Number of power modules		1	
Battery module		LUNA2000-5-E0	
Battery module energy		5 kWh	
Number of battery Modules	1	2	3
Battery usable energy	5 kWh	10 kWh	15 kWh
Max. output power	2.5 kW	5 kW	5 kW
Peak output power	3.5 kW, 10 s	7 kW, 10 s	7 kW, 10 s
Nominal voltage (single phase system)		360 V	
Operating voltage range (single phase system)		350 ~ 560 V	
Nominal voltage (three phase system)		600 V	
Operating voltage range (three phase system)		600 ~ 980 V	

Communication

Display	SOC status indicator, LED indicator
Communication	RS485 / CAN (only for parallel operation)

General Specification

Dimension (W*D*H)	670 * 150 * 600 mm (26.4 * 5.9 * 23.6 inch)	670 * 150 * 960 mm (26.4 * 5.9 * 37.8 inch)	670 * 150 * 1320 mm (26.4 * 5.9 * 60.0 inch)
Weight (Floor stand toolkit included)	63.8 kg (140.7 lb)	113.8 kg (250.9 lb)	163.8 kg (361.1 lb)
Power module dimension (W*D*H)		670 * 150 * 240 mm (26.4 * 5.9 * 9.4 inch)	
Power module weight		12 kg (26.5 lb)	
Battery module dimension (W*D*H)		670 * 150 * 360 mm (26.4 * 5.9 * 14.0 inch)	
Battery module weight		50 kg (110.2 lb)	
Installation		Floor stand (standard), Wall mount (optional)	
Operating temperature		-10°C ~ +55°C (14°F ~ 131°F) [1]	
Relative humidity		5% ~ 95%	
Cooling		Natural convection	
Protection rating		IP 55	
Noise emission		<29 dB	
Cell technology		Lithium-iron phosphate (LiFePO4)	
Warranty		10 years [2]	
Scalability		Max. 2 systems in parallel operation	
Compatible inverters		SUN2000L-2/3/3.68/4/4.6/5KTL [3], SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/4/5/6/8/10KTL-M0 [3], SUN2000-3/4/5/6/8/10KTL-M1	

Standard Compliance (more available upon request)

Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3

Ordering and Deliverable Part

Product ordering model [4]	LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket

1. Charge/discharge derating occurs when the operating temperature from -10°C to 5 °C.
2. Refer to battery warranty letter for conditional application.
3. Available in Q1, 2021
4. Storage system is ordered and delivered in the form of power module and battery module separately with corresponding quantity.