Installation instructions

USV - 0,85 kW / 1,5 kW

Model: 20003219 00012

-en-

51171747_00002

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Symbols

Warning - Risk of injury or danger to life !

Warning - Danger to life through electrical current!

Note - Important information!

▶ **Prompt** - Required action!

Illustrations show example products. Differences from the delivered product are possible.

1 General Safety Information

Intended use

The UPS (Uninterrupted power supply) is intended for operating door drives in case of power failure.

Operational safety is only guaranteed if the machine is used as intended. No liability for damage caused by other applications or non-observance of the information in the manual. Modifications are only permitted with the agreement of the manufacturer. Otherwise the manufacturer’s declaration shall be rendered null and void.

Safety information

Installation and start-up tasks are to be performed by trained personnel only.

Only authorised persons are permitted to work on electrical systems. They must assess the tasks assigned to them, recognise potential danger sources and be able to take appropriate safety measures.

Installation work is only to be carried out with the power off.

Observe the applicable regulations and standards.

Covers and protective devices

Do not operate unless corresponding coverings and safety devices are fitted/installed.

Ensure that seals are correctly positioned and screw fittings are correctly tightened.

Spare Parts

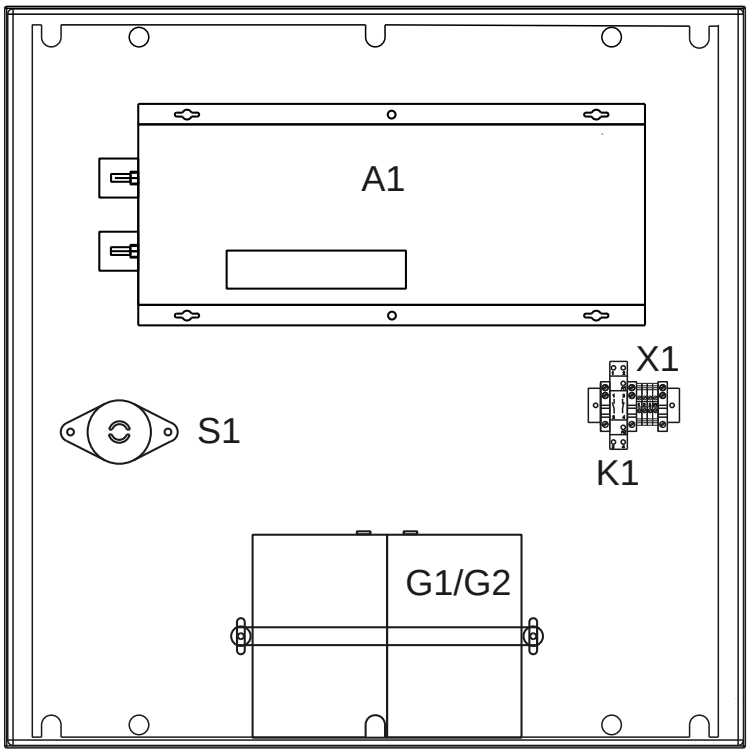
Use only original spare parts.

2 Technical Data

Model	UPS - FIM 0.85/1.5 kW	
Input voltage range	190 - 264	V
Input frequency	50	Hz
Output voltage	230	V
Output voltage tolerance	+/- 10%	
Output frequency	50	Hz
Output power	3000	W
Output waveform	Sinusoidal	
Power factor cos φ	0.8 - 1	
DC voltage range	20 - 30	V dc
DC	180	A dc
Short circuit	540	A dc
Charging current	6	A
Battery capacity	55	Ah
Changeover time, bypass	12	ms max.
Temperature range	+5..+40, Temperatures >25°C reduce the service life of the battery	°C
Air humidity	up to 93% non-condensing	
Weight excluding the battery	65	kg
Dimensions H x W x D	760 x 760 x 300	mm
Battery set (2 pieces)	AGM battery 12V 55Ah, 18kg Design life 10-12 years	

3 Function and Construction

The UPS is based on an inverter with an integrated charger and bypass function. With the batteries, the system represents a complete emergency power supply. When the power supply is present, the batteries are charged through the charger. The load is supplied from the mains supply via the bypass. When the mains supply fails, the load is switched to the inverter.

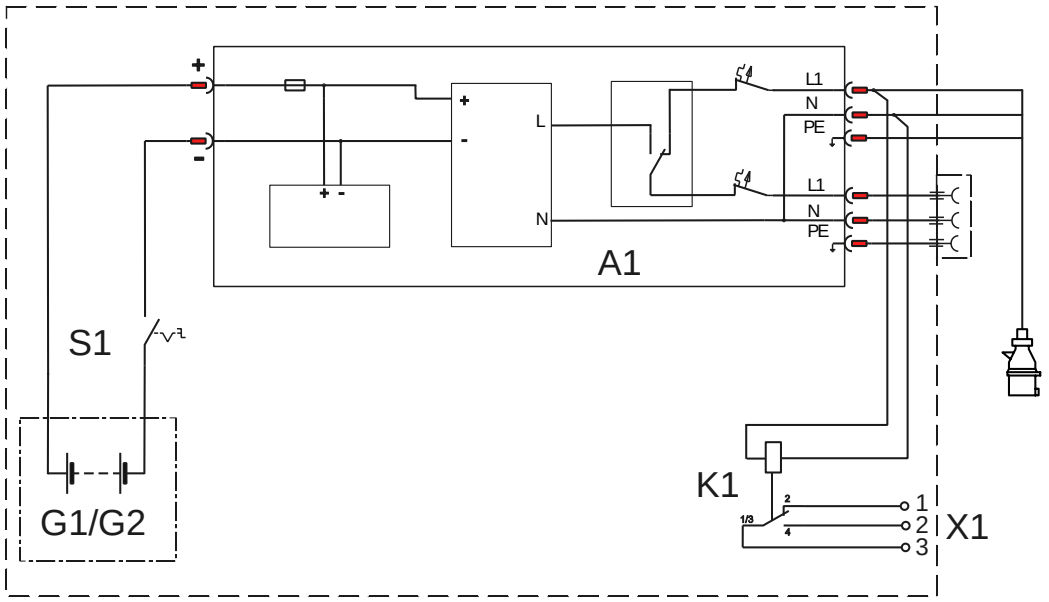


A1	Inverter	**S1**	Battery main switch
G1/G2	Batteries	**X1**	Monitoring the mains input voltage
K1	Relay		

Note - self-discharge of the batteries!

- A prolonged disconnection of the battery charger results in a self discharge. The batteries must be charged after 4 months.

4 Control circuit



A 1	Inverter	**S1**	Battery main switch
G1/G2	Batteries	**X1**	Monitoring the mains input voltage
K1	Relay		

Monitoring the mains input voltage

If there is no mains voltage present, this is registered via a potential-free relay.

Caution - Damage to components!

- The maximum current that may be drawn is 1 A at 230V AC and 0.4A at 24V DC.

5 Electrical Installation

Warning – Danger to life through electrical current !

- Disconnect the cables and check that they are de-energised
- Observe the applicable regulations and standards
- Make a proper electrical connection
- Use suitable tools

Warning - Danger to life from the battery voltage!

- The UPS can be live and carrying a voltage owing to the supply from the battery.
- For maintenance or repair work, disconnect the battery supply using the main

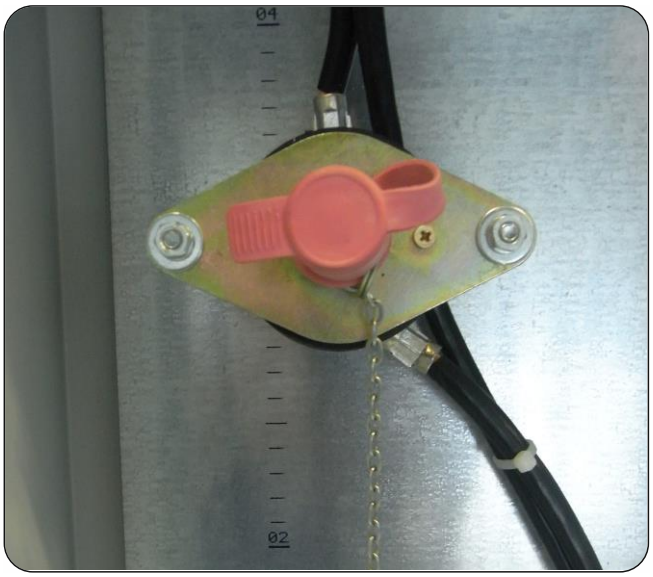
Assembly site of the UPS

- Use only in tempered and dry indoor areas.
- The installation site must be well ventilated and vibration-free.
- The neutral pole of the inverter may be earthed.
- Do not run the backup power supply at temperatures higher than 25°C to prevent damage. Each rise in temperature of 10°C reduces the life of the batteries by 50%.

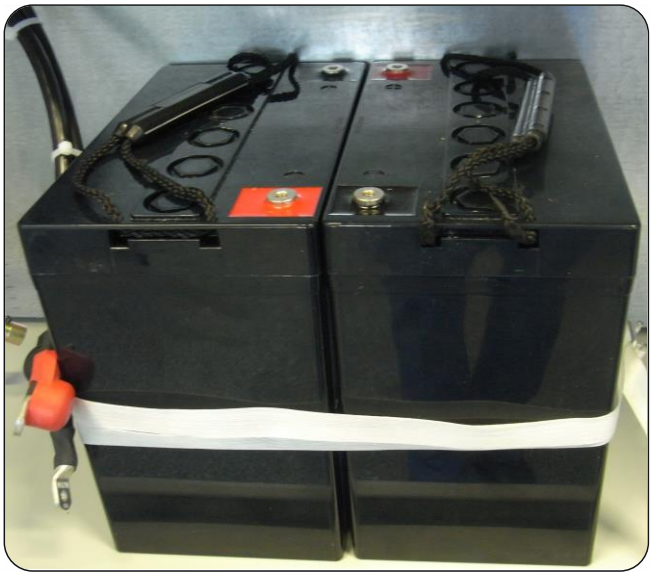
On-site backup fuse and mains disconnector !

- Protection by means of a 1-pole automatic circuit breaker with maximum 10A.
- Connection to the indoor installation via all-pole disconnector unit ≥ 10 A as per EN 12453 (e.g. CEE plug connection, mains switch)
- Connecting the inverter output to the mains input supply will result in the UPS getting destroyed.

- Turn off the main switch of the battery.



Place the batteries in the housing and fasten them with fastener straps.



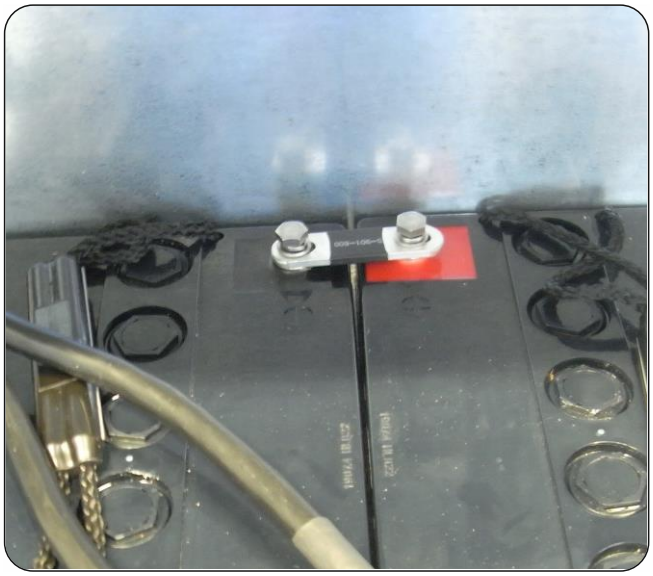
Connect the plus pole (red) to the battery.
Tighten the screw with 7 Nm.
Pull the pole caps over the pole.

Connect the minus pole (black) to the battery.

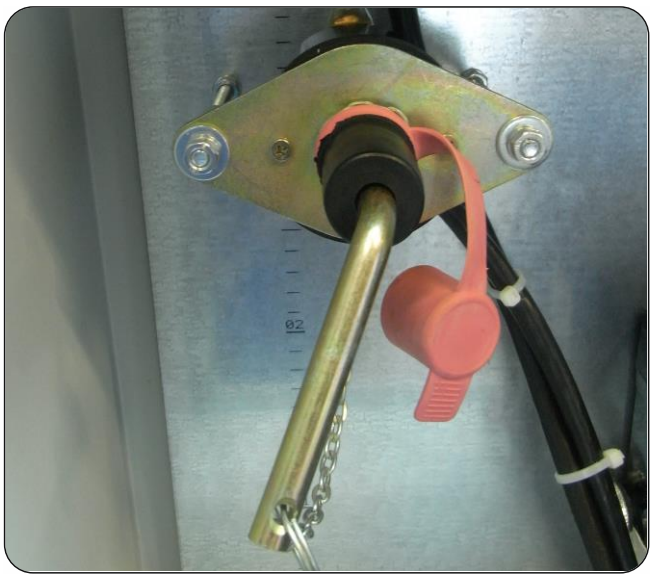
Tighten the screw with 7 Nm

Push the pole caps over the pole

Put the battery bridge in place and tighten the screws with 7 Nm



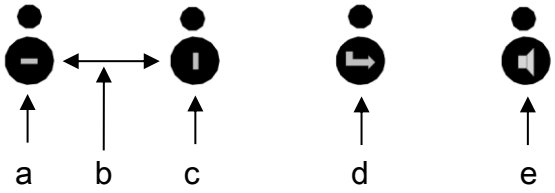
Switch on the main switch of the battery



6 Controls and display elements

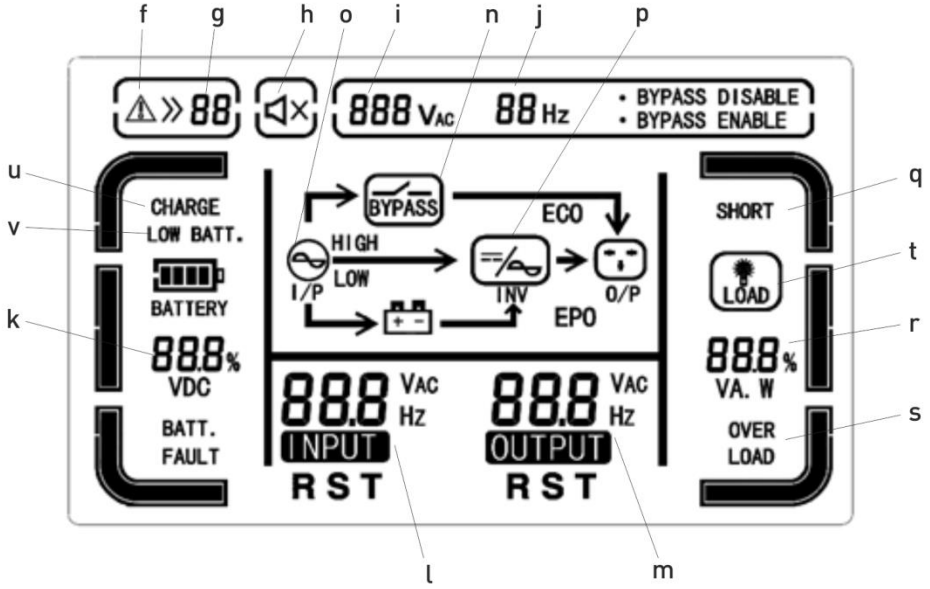
The operating status is indicated on the LCD display 2) of the inverter housing.

1) Using the buttons



Item	Buttons	Function
a	Left-right select	Selecting menu items with cursor left / right
b	Function	
c	UP-down select	Selecting menu items with cursor up / down
d	Confirm	Confirmation button for the selected function
e	Silent	Press and hold for more than 3 seconds - Inverter switches off the audible alarm. Hold for another 3 seconds - Inverter switches on the audible alarm.

2) LCD display



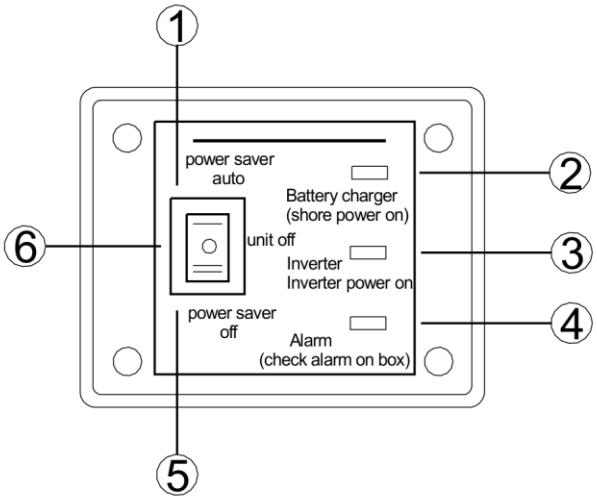
Item	Description
f	If the inverter is faulty, this sign disappears. An error code appears. 01: Excess temperature of the fan / fan failure 02: Overload - the code number flashes every second 03: Short circuit on output 04: Excess temperature of inverter 05: Low battery voltage 06: Reverse polarity on input / output 07: Unusual load conditions, peak values too high, crest factor too high 08: Overcharge of battery - battery fault 09: Overvoltage of battery - charging error
g	Display modes: 00:Standby Mode, 01: AC Mode, 03: Power Save Mode (without function)
h	X means that the audible alarm is switched off
i	Display of output voltage; can be set to 220 V, 230 V, 240 V. (Default is 230 V)
j	Display the output frequency; can be set to 50 Hz, 60 Hz and automatic switching
k	Display of available battery capacity and present battery voltage. Refresh rate: 3 seconds
l	Display of the input values. Refresh rate approx. 3 seconds
m	Display of output values. Refresh rate approx. 3 seconds
n	Device operates in the bypass mode (normal operation)
o	Display "High": Input voltage is above the nominal value. Display "Low": Indication of undervoltage. No display: Mains voltage is in order. Flashing display: L1 and N are interchanged.
p	Inverter operation (mains voltage is not in order)
q	Short circuit on output
r	Display of output power
s	Overload on output; display flashes every second
t	Load available on output
u	Battery is charging
v	Low battery voltage; display flashes every second

7 Commissioning

Connect batteries and supply UPS with mains voltage. Turn the battery main switch in the control enclosure to the ON position. Then the inverter starts a self-test.

3) Description of Power Save switch for battery operation

Normally, this switch should be in position "power saver off".



① Switch in position "power saver auto": The inverter operates in power save mode. The inverter works only if the load is connected. If no load is connected or load <25 W, the output voltage is zero volt. This mode is not suitable for the operation of door systems.

⑤ Switch for inverter operation in position "power saver off": The inverter is switched on. Output voltage is permanently present.

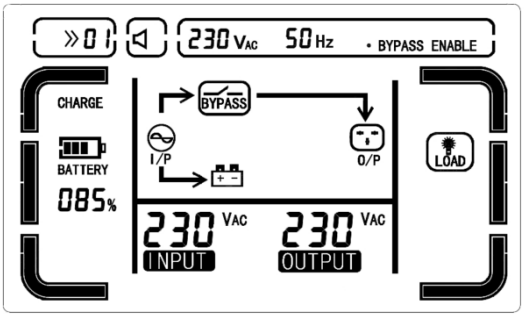
⑥ Switch for inverter operation in position "unit off". The inverter is completely switched off. Voltage is no longer present at the output of the UPS.

Mains operation

When mains voltage is present, the corresponding LED ③ on the control panel is on.

8 Operating modes

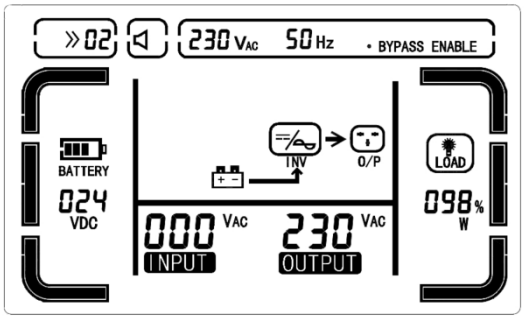
AC mode 01



The UPS is supplied with mains voltage.

Connected loads are operated with the mains voltage.

Inverter battery mode 02



Mains voltage is not present.

Connected loads are operated by the battery.

Note – connection to a generator!

- Start the generator.
- When the generator is running stable, connect the input cable to the generator output.
- Then start the inverter.
- After starting the inverter, connect the load to the output.
- The generator output should be twice as high as the inverter output.

9 Fault code

Fault code	Fault description	Fault causes and fault correction
1	Excess temperature, fan failure (alarm LED ④ is switched on)	Cooling temperature of the inverter is too high. Ambient temperature is too high or the internal fan has failed. Switch the UPS off for 10 minutes and restart. Replace fan if necessary.
2	Overload (alarm LED ④ is switched on)	Connected load is too large for the inverter. Reduce load. The inverter will then switch to normal operation.
3	Short circuit on output (alarm LED ④ is switched on)	Short circuit on output of the UPS / inverter. Switch off inverter and load. Check the installation of the load. Switch the UPS back on without load. If the fault persists, contact the customer service of your supplier.
4	Excess temperature (alarm LED ④ is switched on)	Operating temperature of the inverter is too high. Ventilation inside the UPS is not assured. Let the inverter cool for at least 10 minutes with the door open.
5	Low battery voltage (alarm LED ④ is switched on)	Defective battery; battery fully discharged after power failure and no re-charge (battery replacement); charging problem with the charger. Check battery.
6	Swap of input /n output or reverse polarity.	Connect UPS in phase as shown in the instructions.
7	Unsuitable load on the inverter. Overload behaviour	Remove part of the connected load.
8	Overcharge of battery	Charger defective. Replace module or contact the customer service of your supplier.
9	Overvoltage of battery	Charger defective. Replace module or contact the customer service of your supplier.

10 Troubleshooting

If the inverter cannot be switched on, disconnect the battery from the inverter for 30 seconds. Then switch on again. Contact the customer service of your supplier after another failed attempt.

Radio frequency interference (RFI)

The UPS can generate and emit radio frequency energy. Improper installation and use may result in interference to the radio reception. Interference cannot be completely ruled out in any installation.

Interference to radio and television reception can be determined by turning the device on and off. The user can eliminate the interference by applying the following measures:

- Place the receiving aerial in a different location or realign
- Increase the distance between the receiver and device
- Connect receiver and device to different electric circuits
- Contact a dealer or an experienced radio / TV technician

Note!

- A setting value of the acceleration that is too small (programming item 4.5 / 4.6 for TS controllers), may result in overcurrent shutdown.

11 UPS maintenance

Check every 6 months:

Check the charge status of batteries. (see display: battery capacity and battery voltage)

Voltage level at the front battery terminals must be between 25.0 V and 27.6 V.

Turn off the mains input voltage and open / close the door at least once.

Check every 12 months:

Check the vents of the equipment. Remove dust deposits.

Check fan in the inverter for functioning during battery operation.

Check the fault message on the LCD display.

12 Maintenance of batteries

The AGM batteries used have a long service life if handled properly and are 100 % maintenance free. **Empty batteries cannot be stored and may be damaged within a day.** When the UPS is energised, the controller assumes all measures automatically to protect the battery.

▶ **Disregarding the following points may destroy the batteries.**

- If the UPS operates the door drive during power failure, the power supply must be re-established as quickly as possible.
- If the UPS is disconnected from the mains for a longer period (e.g. start-up with site power supply), the batteries must be fully charged.
- When the UPS is disconnected from the mains for more than 24 hours, the battery switch must be turned to the OFF position.
- A charged battery can be stored for up to 6 months.
- Recharging is required from a block voltage of 12.8 V.

13 Replacement battery

Type: **Certo L 12 – 55** 12 V / 55 Ah Design Life 10-12 years

Sichere Stromversorgung

Professionelle-Stromversorgungs-Geräte

PSG Elektronik

EG-Konformitätserklärung

Für folgendes Erzeugnis ***USV Anlagen der Serie „PSG NSV 1500VA – 3000VA“***

wird bestätigt, dass es folgenden Vorschriften, insbesondere den Schutzanforderungen nach folgenden EU Richtlinien entspricht:

Niederspannungsrichtlinie **2014/35/EG vom 26. 02. 2014, sowie der Richtlinie 2014/30/EU über die elektromagnetische Verträglichkeit vom 26.02.2014.**

Diese Erklärung gilt für alle identischen Exemplare des Erzeugnisses, die nach den beigefügten Entwicklungs-, Konstruktions- und Fertigungszeichnungen und Beschreibungen, die Bestandteil dieser Erklärung sind, hergestellt werden.

Zur Beurteilung des Erzeugnisses hinsichtlich der elektromagnetischen Verträglichkeit und sicherheitstechnischer Ausführung, wurden folgende einschlägige harmonisierte europäische Normen herangezogen, deren Fundstellen im Amtsblatt der Europäischen Gemeinschaften veröffentlicht wurden:

EN 62040 – 2	Störfestigkeit , EMV
EN 62040 – 1 (VDE 0558 Teil 510)	Allgemeine Anforderungen an USV Anlagen
EN 55022 / EN 61000-2.....-3	EMV, Funkstöreigenschaften, Störfestigkeit
EN 60950	Sicherheit
VDE 0100-410	Sicherheit
VDE 0100-560	Errichten von Niederspannungsanlagen Teil 5-56: Auswahl und Errichtung elektrischer Betriebsmittel – Einrichtungen für Sicherheitszwecke
EN 60146	Halbleiterstromrichter, Allgemeine Anforderungen

Diese Erklärung wird verantwortlich für folgenden Hersteller/Importeur abgegeben:

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Name des Unterzeichners:	Theodor Harms	
Stellung im Unternehmen:	Geschäftsführer	

Leer 01.08.2015

Ort **Datum** **Rechtsverbindliche Unterschrift**

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Sitz der Gesellschaft ist Leer
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HRB 201729
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