



Appendix to instruction manual

Transport and preliminary information with checklist for commissioning

PowerBooster GSS0813

Outdoor battery storage system

DVK-GSS0813 010-AE (with master system setup)

DVK-GSS0813 020-AE (with EMS functionality)



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1 Transport information

(Detail from the instruction manual)

The battery modules are declared as dangerous goods when transported. Follow the relevant instructions on the packaging.

Check that the delivery package is complete and in flawless condition. If parts are missing or damaged, do not use the product and submit a complaint to the supplier.

The storage system is delivered in 3 parts:

- 1x pallet with preassembled storage system, without battery modules
Weight approx. 700 kg net / 725 kg gross.
- 1x pallet with 4 battery modules as well as installation kit (1x CAN terminator, 8x power cables, 8x communication cables, key for cabinet, 36x socket head cap screws Tx30 galvanized x 36, 4x cable clamps, 2x ferrites and manual
Weight approx. 330 kg net / 355 kg gross.
- 1x pallet with 5 battery modules
Weight approx. 400 kg net / 425 kg gross.

CAUTION



Risk of irreversible damage to the components!

Improper transport can irreversibly damage components.

- ➔ Use only means of transport that are designed for the weight of the storage system and battery modules.
- ➔ Transport the battery modules to the final location separately from the storage system.
- ➔ Transport the storage system upright with the help of a forklift to the final location.
- ➔ Bear in mind that the centre of gravity of the storage system is not positioned centrally.
- ➔ Move the storage system only when in a lifted state.
- ➔ Use non-slip mats on any surfaces where the storage system will have to be set down temporarily.

WARNING

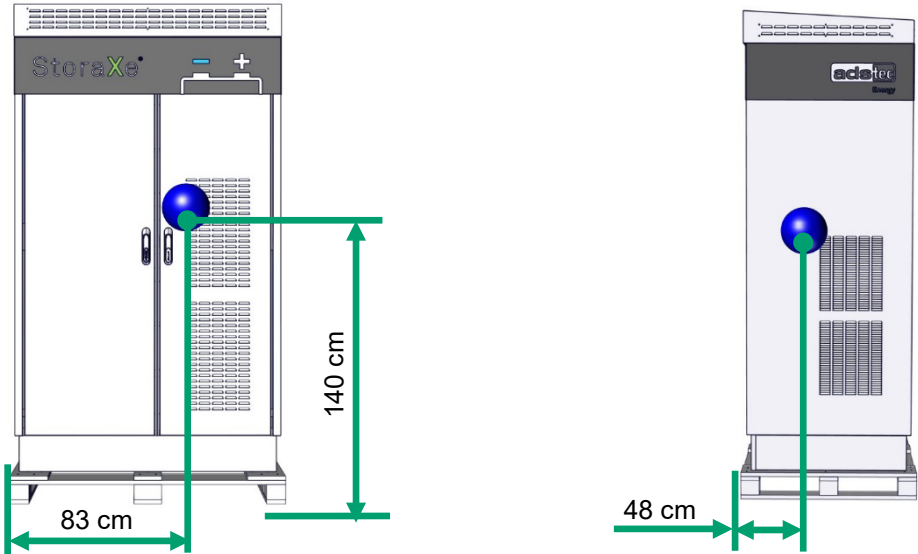


Hazard from heavy loads!

If the storage system or the battery modules tip over or fall, they can cause serious injuries.

- ➔ Hazard from falling or tipping loads.
- ➔ Risk of crushing hands and feet during transport.

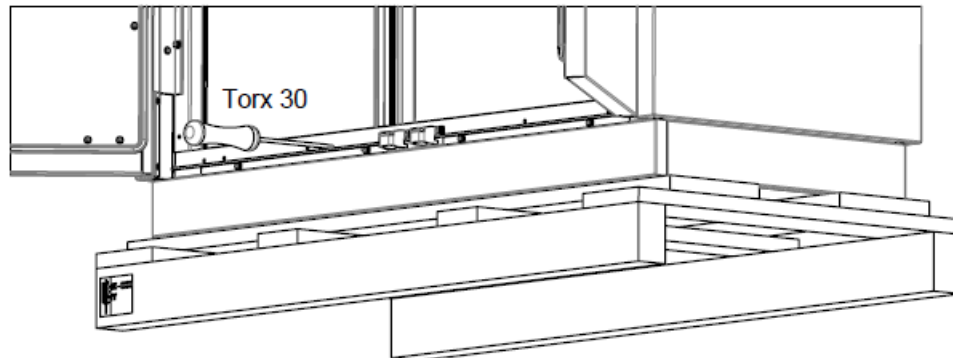
The centre of gravity of the storage system without built-in battery modules is indicated on the packaging as follows:



2 Installation information

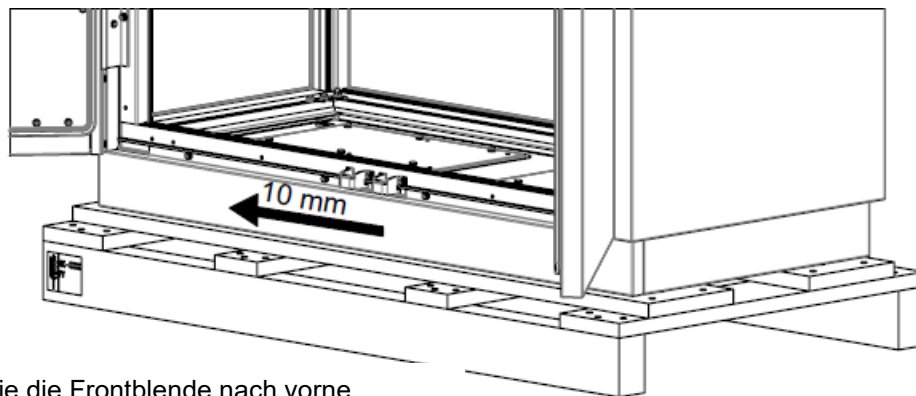
(Detail from the information of the housing manufacturer – German/English)

Blenden entfernen/Removing the panels



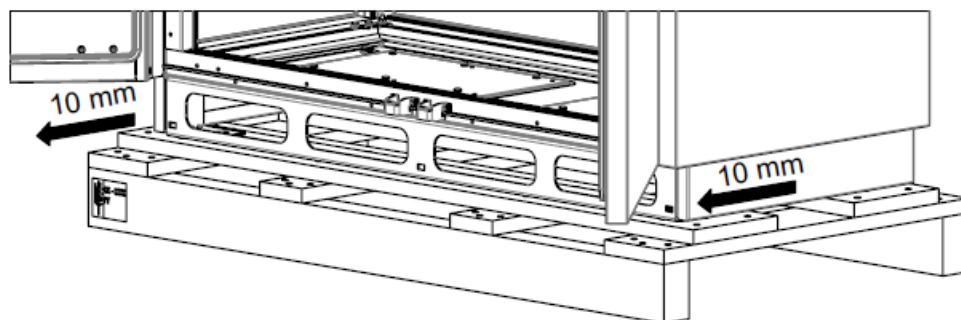
- 1 Lösen Sie die Befestigungsschrauben des vorderen Sockels.

Undo the fixing screws of the front panel.

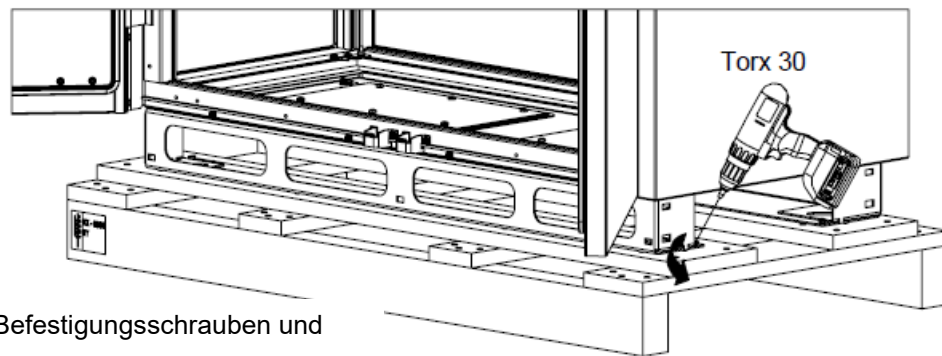


- 2 Schieben Sie die Frontblende nach vorne und entfernen Sie diese.
- Slide the front panel forwards and remove it.*

- 3 Schieben Sie die seitliche Blende nach vorne und entfernen Sie diese.
- Slide the side panel forwards and remove it.*



Palette entfernen/Removing the pallet



Lösen Sie die 4 Befestigungsschrauben und entfernen Sie die Palette.

Undo the 4 fixing screws and remove the pallet.

3 Requirements regarding installation location

(Detail from the instruction manual)

The system is designed for stationary use in an outdoor area. Make certain that the specified environmental conditions are maintained at all times. Use in non-specified environments, e.g. on board ships, in explosive atmospheres or at high altitude (see the climatic environmental conditions) is prohibited.

CAUTION



Hazard due to environmental and property damage!

- ➔ If modifications or changes are made at the installation location at a later stage, the environmental conditions and compliance with the requirements regarding the installation location must be observed.

CAUTION



Hazard due to condensation!

- ➔ Condensation may form if the system has not had sufficient time to settle to the environmental conditions following transport or before it is put into operation again. (Connection to AC supply is required.)

3.1.1 Environmental conditions

Observe the environmental conditions information in the technical data.

3.1.2 Requirements regarding installation location

Please note that the battery system may not be set up and operated

- in buildings, garages, courtyards and other covered structures
- in areas where there is a risk of flooding
- in areas where there is a risk of fire and explosion
- in the vicinity of combustible materials
- in areas with sandstorms
- in permanent residential areas
- in the vicinity of escape routes

Installation conditions:

- The "Commissioning requirements" checklist must be completed and signed (☞ 8 Checklist for commissioning).
- The system is only suitable for outdoor installation.
- Observe the following floor space requirements for the system:
- The floor space is to be constructed at the installation location in accordance with the local conditions and technical data.

- Protected against wind
 - The floor space is exactly horizontal.
 - Cable entry is from below.
 - The floor space has the required load capacity for the 1.5 t weight of the system and has to withstand this load permanently. If applicable, also take into account the weight of the means of transport.
- Sufficient drainage is available.
 - Earthing via ring earth electrode for flexible connection cable (min. 16 mm²) according to national and local regulations and conditions must be in place.
 - Observe the following minimum distances:
 - Clearance from rear side to wall or to other objects/other storage systems: no clearance required.
 - Clearance from sides (left + right) to wall or to other objects: min. 1 m.
 - Clearance from front side to other objects: 1.5 m (0.7 m for opened doors + 0.8 m for service activities).
 - Take into consideration any additional clearance required for escape routes (min. 0.8 m).
 - Note that ventilation openings must be kept clear.
 - The air at the ventilation openings must be able to circulate freely.
 - During the entire operating time, no leaves, dirt, etc. must be sucked in from the ventilation openings.
 - Protect the system against penetrating water (groundwater or flood hazard area).
 - Keep the existing housing doors closed.

Installing multiple systems in a group (scaling)

- Observe the minimum clearance for each individual system
- Observe the resulting requirements with regard to floor space
- Observe the supplementary information as well as the examples for setting up in a group (☞ instruction manual in the document "*ADS-TEC_Energy_PowerBooster_GSS0813_Online_manual*").

Installation in built-up areas

- When installing in built-up areas, observe the local noise abatement regulations (Germany: "Technische Anleitung zum Schutz gegen Lärm" (Technical Instructions for Protection against Noise), abbreviated "TA Lärm"). Observe the resulting minimum distances to residential buildings.

Electrical connections

- Note the information in the electrical diagram (☞ Electrical diagram in document "*ADS-TEC_Energy_PowerBooster_GSS0813_Online_manual*").

4 Technical data

System configuration	Operating configuration	ads-tec Energy Master System or via ads-tec Energy Management System (EMS)
	Mechanical configuration	1 x Outdoor cabinet
	Inverter configuration	3 x TH TruConvert AC 3025 in parallel
	Battery configuration	1 x SRS0128
Communication	System Controller	EMM3821
	User interface	Ethernet
	Communication protocol	ads-tec Master Interface Modbus/TCP
Dimensions	Outdoor Unit	Inverters, Battery, Cooling system
	System Dimensions (H x W x D)	2500 x 1430 x 940 mm (+/-20 mm)
	System Weight	approx. 1420 kg
	Module Weight SRB7143	approx. 80 kg
	Mechanical Setup	19" double cabinet
	Protection from mechanical impact	IK 10
Electrical	AC Side	
	Grid Form	TN-S with 3L + N + PE (stationary)
	Grid Frequency	50 Hz
	Grid Voltage	400 Vac
	Nominal Power	75 kW
	Operation mode	Grid-Synchronous or Microgrid (Island-Mode)
	Max. Current per line	130 A
	Max. AC short circuit current (I _{cc})	10 kA
	Overvoltage category	III (internal use of SPD Type 1/2)
	Safety	External use of RCD Type B or RCMS with feedback to external NA protection
	AC Side (Microgrid – Island Mode, information according to VDE-AR-E 2510-2 A.1 – A.3)	Earthing via monitored neutral (star) point within GSS0813
	Asymmetric load	Max. 24.9 kVA/phase
	Max. short circuit current	240 A for 500ms
Max. voltage during short circuit	400 Vac	

	Automatic reconnection	No automatic reconnection after short circuit
	Withstand current neutral (star) point	2,1 kA for 5s
	Withstand current neutral (star) point	159 A for normal operation
<hr/>		
DC Side (inverter)		
<hr/>		
	Min. Voltage	720 Vdc
	Max. Voltage	950 Vdc
	Maximum Current	3 x 36 Adc
<hr/>		
Battery	Number of Battery Strings	1 x SRS0128
	Nominal system voltage	805.9 Vdc
	Minimum system voltage	669.6 Vdc
	Maximum system voltage	896.4 Vdc
	Minimum operating voltage	691.2 Vdc
	Maximum operating voltage	891.0 Vdc
	Max. charge current	98 A
	Max. discharge current	157 A
	Nominal system capacity	163.2 Ah
	Nominal system energy	128.7 kWh
<hr/>		
	Cell technology	Lithium-NMC
	Nominal module capacity	163.2 Ah
	Nominal module energy	14.3 kWh
	Self discharge	< 2 % per month at 25°C
	Storage time	12 months at 25 °C @ SOC > 30%
<hr/>		
Ambient conditions	Operating temperature	-20 to 40 °C
	Max. altitude	2000 m above sea level
	Cooling	air cooling (HVAC included)
	Degree of pollution (internal)	II
	Protection type (EN 60529)	IP55
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Interfaces (Communication)	Mobile	4G/LTE, 3G and 2G
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	Channel 1	Remote-Service-Access (Big-LinX)
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	Ethernet	2x RJ45 100/1000 Mbit/s
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	Channel 1	Local customer control
<hr/>		
	Channel 2 (optional)	Local service interface and interface for integration of external smart meters in EMS operating mode.

**Interfaces
(Installation)**
AC connection

Connection type	5x High-current terminal block; screw connection
Min. cable cross section	25 mm ² AWG3 (flexible)
Max. cable cross section* (*difficult assembly when using solid cables)	70 mm ² AWG2/0 (flexible)
Cross section of AC supply	Min. cross section depends on cable type and type of laying
Stripping length	24 mm
Cross section cable entry plate	27 – 48 mm

Ethernet-Connection ‚Channel 1 Customer‘ & ‚Channel 2 Service-Access‘

Connection type	RJ45 socket
Cable type	Cable type depends on cable type and type of laying

Inputs/Outputs „External Stop“, „Customer Signal 1/2/3“, „Status Neutral (star) Point“, „Status Grid“, „Status Coupling Switch“; Optional: „U+/U-/f+/f-“

Connection type	Surge protection device; screw connection
Max. cable cross section	4 mm ² AWG 12
Cross section of signal cable	Min. cross section depends on cable type and type of laying
Stripping length	10 mm
Cross section cable entry plate	max. 10 mm

Grounding

Number of grounding points	1x M6 connection point at internal equipotential bonding rail
Cross section and cable type	Cross section and cable type depends on use case and local requirements but min. 16mm ² (recommendation: 35mm ²)

Standards

Transport certification	UN 38.3 (on module level)
EMC immunity	IEC 61000-6-2 (Industrial Level)
EMC emission	IEC 61000-6-4 (Class A)

	Safety (functional and electrical)	IEC 61439-1:2011; IEC 61439-7:2020; IEC 62109-1:2010; IEC 61508; IEC 62619:2017; IEC 62485-5:2017.
	Application rule	VDE-AR-E 2510-2:2021 (with external NA-protection); VDE-AR-N 4100:2019; VDE-AR-N 4105:2018 (with external NA-protection); VDE-AR-N 4110:2018 (with external NA-protection).
Warranty	Deadline for claims for defects	24 months.
Durability	In connection with existing BigLinX-Service contract	Up to 10 years
Operation & Service	Qualification of service personnel	electrically skilled person only, initial and repetitive training recommended
	Qualification of user	no qualification required

Table 1: Technical data

5 Temporary storage of the battery modules

Observe the manufacturer specifications and safety data sheets of the battery cell.

Always observe the environmental conditions for storing batteries (no direct sunlight, dry indoor area, no frost). Check the charge state of the batteries regularly if they remain in storage for longer than 6 months. Observe the storage information (➔ instruction manual in the document "ADS-TEC_Energy_PowerBooster_GSS0813_Online_manual").

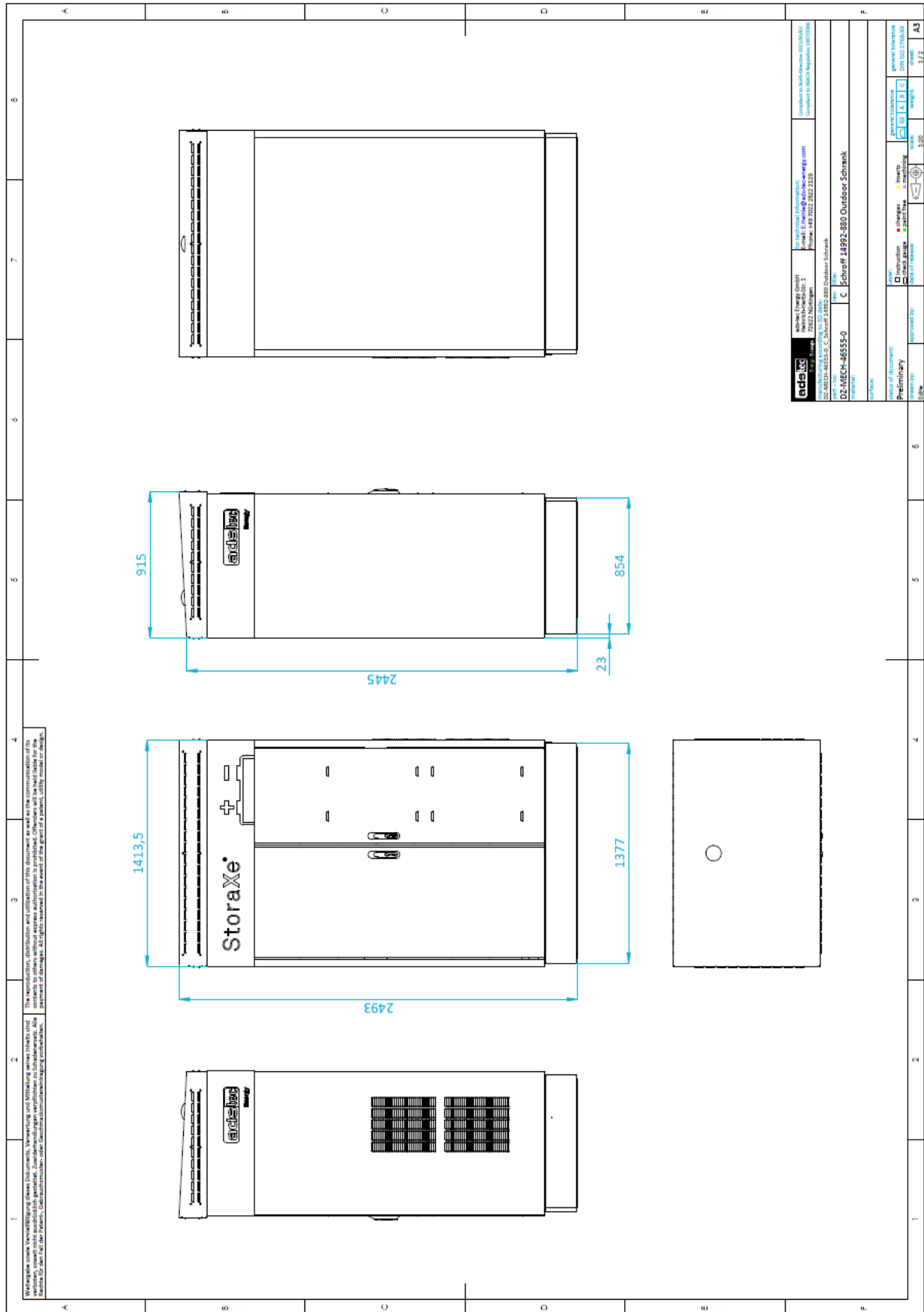
CAUTION



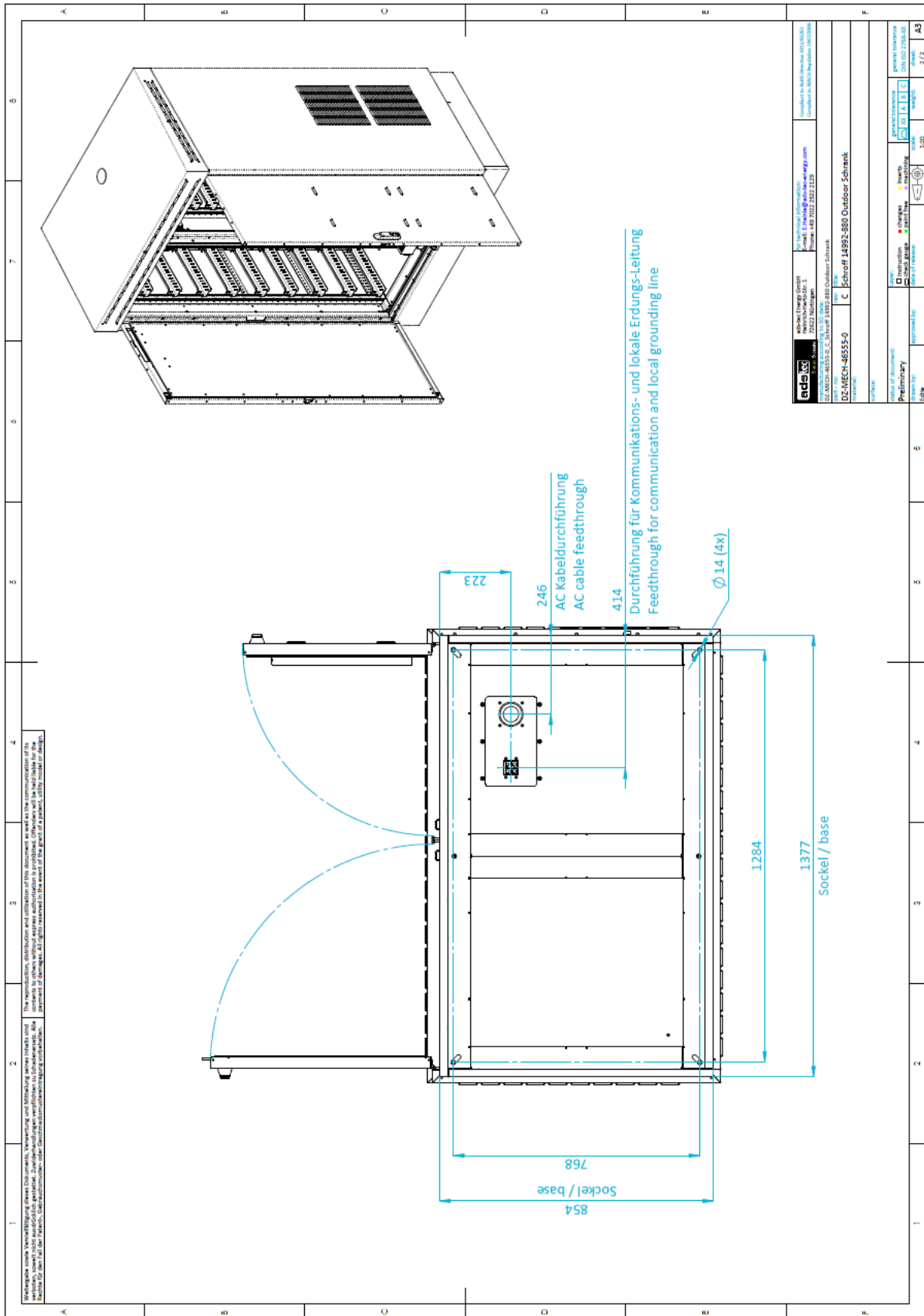
Damage to property due to incorrect storage!

- ➔ Until installation, store the battery modules properly according to the information in the data sheet (➔ instruction manual in the document "ADS-TEC_Energy_PowerBooster_GSS0813_Online_manual").
- ➔ No direct sunlight, no large temperature fluctuations, no frost.
- ➔ Optimum storage conditions SRB7143: 10 to 25 °C (32 to 77 °F) at less than 80% humidity.
- ➔ Avoid condensation.
Condensation can occur if the battery module has not been sufficiently climatically adjusted after transport or before installation.
- ➔ Protect the packaging from rain and penetrating moisture. The packaging is not waterproof.

6 Construction drawing



7 Base drawing



8 Checklist for commissioning

Checklist: Commissioning requirements for GSS storage system

Please send this filled out checklist to support-est@ads-tec-energy.com at least 10 working days before the planned commissioning.

Project name:		Order number:	
Client:		Contact person:	
		Telephone/mobile:	
Commissioning date:		E-mail:	
Client address:		Plant location (if different):	
1) Before delivery and commissioning	OK	nOK	Comment
Attachment points for the storage system prepared according to base drawing			
Earthing via ring earth electrode for flexible connection cable available			
Door stop and swivel range taken into account			
Safety distances (fire protection) taken into account			
Protection against penetrating water (groundwater or flood hazard area) taken into account			
ventilation openings and their 1.5 m unobstructed ventilation around the storage system taken into account			
Routing of AC power supply to the transfer point carried out according to electrical diagram			
AC power supply connected on the grid side. Grid side fused according to the requirement in the electrical diagram.			
SIM cards (4G/LTE) and local Ethernet connection for communication / control / monitoring available			
Customer-specific: additional meters / smart meters for installation during commissioning are available			
Only for Master mode: Software / control solution available			
Connection permission obtained from the local network operator			
Requirements/permission for charging / discharging from/into the grid during commissioning obtained			

2) Delivery and installation at the plant location		OK	nOK	Comment
Installation at system location organised by forklift (GSS) or crane (battery modules). Information in the transport drawing taken into account.				
Access possible for trucks to the plant location.				
Necessary road closure for crane / truck during unloading approved.				
Access to the plant location provided for the logistics and commissioning personnel.				
3) Day of commissioning		OK	nOK	Comment
On the day of commissioning at the plant location, authorised electricians are charged with connecting and checking the cabling in accordance with DIN VDE 0100-600 (including protocol)				
Grid test: Rotating field right and loop check < 0.3 Ohm				
Switching authorisation for power and auxiliary voltage supply assigned on day of commissioning The person authorised for switching is on site.				
Customer-specific: additional meters / smart meters for commissioning are installed and ready for operation				
Customer-specific: external control for testing the charging / discharging process is functional and the test can be carried out				
Customer-specific: SIM card (LTE) / local Ethernet Internet connection connected and communication possible				
The customer's qualified personnel for operational handover with instruction is available at the plant site on the day of commissioning				
Additional comments / notes:				
Location		Date		Name in block letters
				Signature
My signature confirms that the necessary prerequisites for the installation and commissioning of the PowerBooster battery storage system have been professionally created. ads-tec assumes no liability for any costs resulting from failure to comply during delivery, installation and commissioning as well as during subsequent operation.				

9 Contact

9.1 ADS-TEC support

The ADS-TEC support team is available for inquiries from direct customers between 8:30am and 5:00pm, Monday to Friday. The support team can be reached via phone or e-mail:

Phone: +49 7022 2522-203

E-mail: support.est@ads-tec-energy.com

9.2 Company address

ads-tec Energy GmbH

Heinrich-Hertz-Str. 1

72622 Nürtingen

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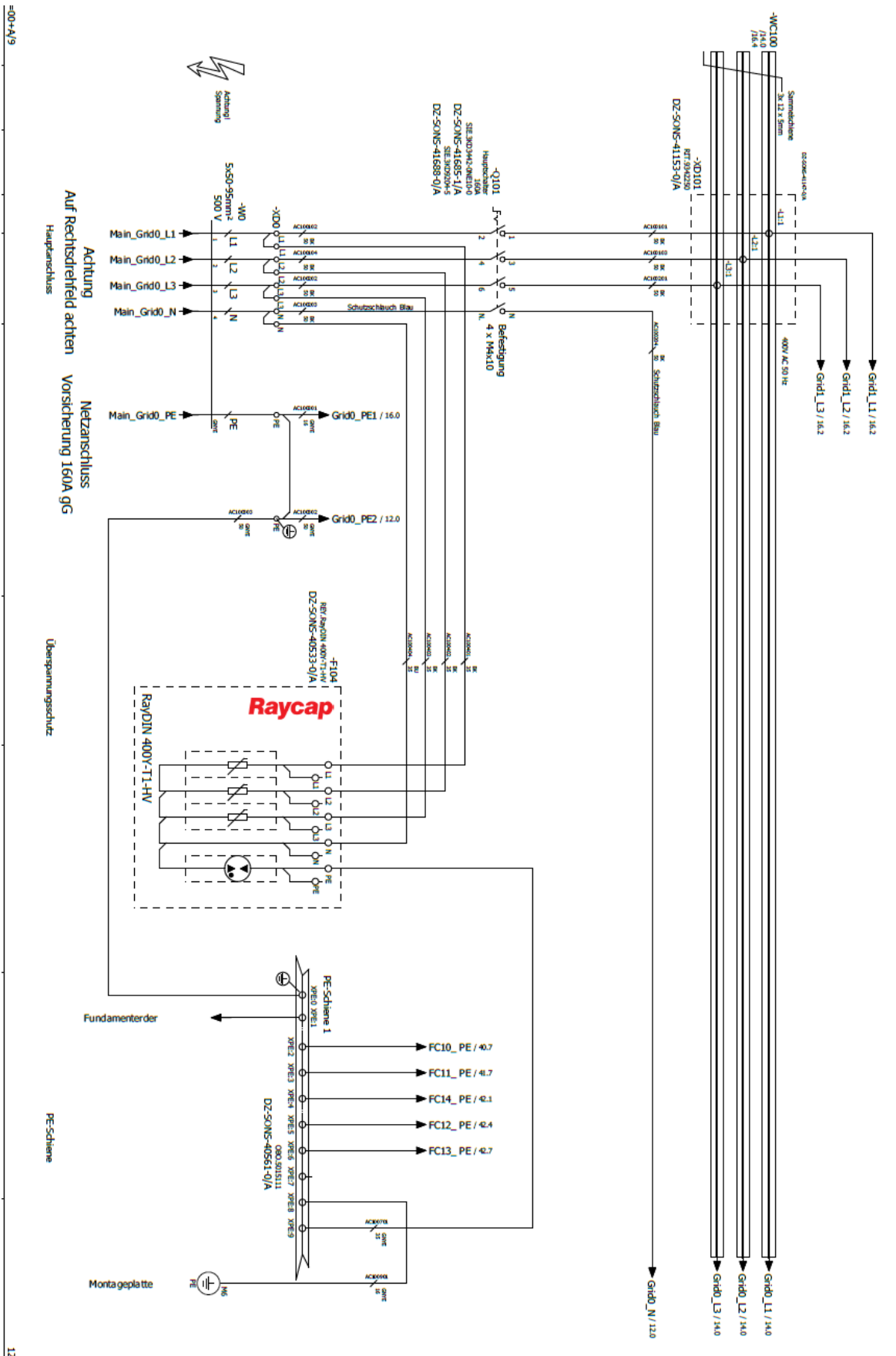
Phone: +49 7022 2522-201

E-mail: energy@ads-tec-energy.com

Home: www.ads-tec-energy.com

10 Appendix

10.1 Detail from electrical diagram



10.2 Revision history

Date	Revision	Change	Creation	Release
07.05.2023	V1.0	Initial document	Ruoss	
27.06.2023	V1.1	Layout adjustments Technical data updated Storage temperature of battery modules changed Construction and base drawing updated	Trautmann	
08.08.2023	V1.2	Technical data updated, Transport information (picture) updated.	Ruoss	