Translation of the Original Operating Manual

Energy storage system – BattPak Xpansion2100

Read operating manual before starting any work!
Keep the operating manual for future use!

CE

Revision			
Date	Chapter	Reason for change	Person responsible
07-25		New creation	R&D

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1 Content

2 General

2.1 Operating manual

This operating manual provides guidance on safe and efficient operation and should form a basis of any actions involving the machine. It is an integral part of the machine, which should be kept in the immediate vicinity accessible for its operating personnel.

Prerequisite of safe operation is adherence to all safety and handling instructions.
Therefore, before starting any work, the personnel must read carefully and understand the operating manual.

Moreover, the accident prevention regulations applicable at the site of the machine operation and general safety regulations must be complied with.

2.2 Symbols, acronyms, terminology

Symbols, acronyms and specialist terminology used in this document have the following meaning:

→	See item
▶	Enumeration
-	Enumeration
1	Position number
1.	Action step
Text in italics	Explanation of facts
🕮	Refers to the document contained in the enclosed documentation. The source of the document is specified in italics behind the symbol.

2.3 Explanation of symbols

Warnings and safety instructions

Warnings and safety instructions in the manual are identified with the pictograms and provided in blocks highlighted in grey.

Warnings and safety instructions, which draw attention to fundamental dangers, are additionally preluded by signal words, which specify the scope of damage. Their structure is as follows:

SIGNAL WORD!
Origin of the danger.
Consequences of ignoring the danger.
- Actions to avoid danger

- ▶ All warnings and safety instructions must be implicitly complied with!
- ▶ During the works, always act with caution, to avoid accidents, personal and material damage!

Pictograms combined with signal words mean:

DANGER!

... draws attention to an immediate danger that, if not avoided, may result in heavy or even fatal injuries.

WARNING:

... draws attention to potentially dangerous situations that, if not avoided, may cause heavy or even fatal injuries.

CAUTION!

... draws attention to potentially dangerous situations that, if not avoided, may result in slight injuries.

ATTENTION!

... draws attention to potentially dangerous situations that, if not avoided, may result in material damage.

Tips and recommendations

NOTE!

… highlights tips and recommendations as well as information on efficient and trouble-free operation.

Special safety instructions

To make aware of special dangers, the following pictograms are used in combination with the safety instructions:

… marks danger due to electric current.
Failure to observe the safety instructions leads to danger of heavy or fatal injuries.

… marks danger of crushing.
Failure to observe the safety instructions leads to danger of heavy injuries from moving parts.

… marks danger due to hot surface.
Failure to observe the safety instructions leads to danger of burns and heavy skin injuries caused by heat.

2.4 Liability limitation

All data and instructions provided in this manual were compiled with consideration of applicable standards and regulations, state of the art in this field and our long-standing insights and experience.

The manufacturer accepts no liability for damages caused by:

- Non-observance of the Operating manual
- Unintended use
- Employment of unskilled and uninstructed personnel
- Unauthorised conversions
- Technical changes
- Use of non-approved spare parts

The responsibilities agreed in the delivery contract, the General Terms and Conditions as well as the delivery conditions of the manufacturer and the statutory regulations valid at the time of the conclusion of the contract shall apply.

Warranty

The manufacturer guarantees the functional capability of the applied process technology and performance parameters identified.
The warranty period commences with the defect-free delivery.

Wear parts

Wear parts are all parts having direct contact with the processed or machined material during normal operation.
These parts are excluded from warranty and defect claims, insofar as tear and wear resulting from normal operation.

Service life warranty

Service life warranty is granted for wear parts for the period of 6 months from the acceptance of the defect-free product.

Warranty conditions

12 months after delivery of mechanical and electrical components for one-shift operation, except for the wear parts and tools.
The warranty claim expires, if the system was not installed and started up by our experts.
The warranty extends to the replacement parts.
Consequential damages are excluded.
Damage caused by natural wear, deficient of improper maintenance, failure to comply with the operating regulations, excessive loads and use of inappropriate equipment shall be excluded from the warranty.

2.5 Customer service

Our customer service department is available to provide technical information.

Service hotline
02482 – 12 200

You can obtain tips via the regional competent contact person by phone or via fax, email or website at any time.

Moreover, our employees are interested in new information and experience arising from use and which can be valuable for the improvement of our products.

2.6 Copyright

3 Safety

This section provides an overview of all safety aspects of protection of operators and users from potential dangers, and safe and trouble-free operation.
Disregarding these handling instructions, warnings and safety instructions may pose serious risks.

3.1 Intended use

The BattPak Xpansion2100 is designed exclusively for the following purposes:

The BattPak Xpansion2100

- ▶ is a mobile energy system. It is designed to increase the capacity of the BattPak 3621.

WARNING:
Risk of unintended use!

Any use beyond the intended use of the machine may result in dangerous situations.

- The machine must be basically used for the intended purpose according to data contained in this document, in particular, within the application limits provided in the technical data.
- Refrain from any use beyond this scope or different use of the machine.
- Refrain from remodelling, refitting or changing the design or separate parts of the machine for the purpose of changing the field of application or applicability of the machine.

- ▶ Any claims for damages resulting from unintended use are excluded.
- ▶ The operator alone is responsible for all damages due to unintended use.

3.2 Rationally foreseeable misuse

WARNING:
Risk of injury caused by misuse!

When misused, the machine may create dangerous situations for persons and cause heavy material damage.

- Refrain from any misuse of the machine.

Any use of the machine going beyond the intended one, shall be deemed unintended and thus prohibited.

3.3 Responsibilities of the operator

Operator

An operator is every natural or legal person, who uses the machine or delegates its use to others and is responsible for the safety of the user, personnel or third parties in the course of such use.

Operator's duties

The machine is used in the commercial sector. Therefore, the operator of the machine is subject to statutory obligations regarding occupational safety.

In addition to the warnings and safety instructions in this manual, the occupational safety, accident prevention and environmental protection regulations applicable to the field of the machine operation must be adhered to.

The operator, in particular, must:

- be informed about current occupational safety regulations,
- determine, through hazard evaluation, any potential additional dangers resulting
- from specific usage conditions at the site of the machine operation,
- put necessary behavioural requirements of the operating instructions into practice during the machine tool operation at the operation site,
- check regularly throughout the service life of the machine, whether the operating instructions drawn up by the operator are in line with the current status of rules and regulations,
- adjust the operating instructions, where necessary, to the new regulations, standards and operating conditions,
- exercise control of the competence for installation, operation, maintenance and cleaning of the machine in a clear and unambiguous manner,
- make sure that all personnel involved with the machine have read and understood the operating instructions. Moreover, the personnel must undergo training in handling the machine at regular intervals and be informed about potential dangers,
- provide the persons appointed for operating the machine with the prescribed and recommended protective devices.

Moreover, the operator is responsible for ensuring that the machine

- is always in a technically perfect condition,
- is maintained according to the specified maintenance intervals, and
- that all safety mechanisms of the machine are regularly controlled for completeness and functionality.

3.4 Responsibilities of the personnel

The machine is in the commercial use. Therefore, the personnel are subject to statutory obligations regarding occupational safety.

In addition to the warnings and safety instructions in this manual, the occupational safety, accident prevention and environmental protection regulations applicable to the field of operation must be adhered to.

In particular, the personnel must:

- be informed about current occupational safety regulations,
- adhere to behavioural requirements set out in the operating instructions issued at the site of the machine operation,
- properly exercise the responsibilities entrusted to them as regards installation, operation, maintenance and cleaning of the machine,
- fully read and understand the operating manual before starting work,
- use the prescribed and recommended protection equipment,

Moreover, scope of responsibility of every person operating the machine includes the duty of always

- keeping it in a technically perfect condition,
- performing maintenance, according to the intervals specified,
- controlling all safety mechanisms for completeness and functionality on a regular basis.

3.5 Personnel requirements

Fundamentals

Any operation with the machine may only be carried out by the persons, capable of performing their work properly and reliably and meet every requirement mentioned.

- No works can be carried out by the persons, whose response capability is affected, e.g., by drugs, alcohol or medicines.
- When deploying personnel at the site of operation, always adhere to the applicable occupational and age-specific regulations.

Qualification

WARNING:
Risk of injury for unqualified personnel!

Improper operation can result in significant personal and material damage.

- Any operations must be only carried out by the persons having required training, knowledge and experience.

Instructed personnel

Instructed personnel are the persons, who have been instructed by the operator on the tasks to be carried out and potential dangers in a detailed and verifiable way.

Specialist personnel

Specialist personnel are the persons, who, due to their professional training, knowledge and experience, as well as knowledge of the relevant provisions, are capable of duly carrying out the works assigned, recognise potential dangers independently and avoid personal and material damage.

Qualified electricians

As a matter of principle, all works on the electrical installations must be carried out by qualified electricians.

Qualified electricians are the persons, who, due to their specialist training, knowledge and experience, as well as knowledge of the relevant provisions, are capable of duly carrying out the works on electrical systems, recognising potential dangers independently and avoiding personal and material damage caused by electric current.

Unauthorised persons

WARNING:
Danger of injuries for unauthorised persons!

Those who have not been instructed are not aware of the dangers in the area of operation and must be considered unauthorised persons.

- Keep unauthorised persons away from the area of operation; if in doubt, address the persons met and banish them from the area of operation.
- Suspend operations until unauthorised persons leave the area of operation.

3.6 Personal protective equipment

Observe the personal protective equipment requirements according to the device connected to the Battpak 3621.

3.7 Dangers

The machine has undergone a risk review. Wherever possible, the identified dangers were eliminated and risks reduced. Nevertheless, the machine poses residual risks described in the following section.

- Strictly observe warnings and safety instructions specified here and in the chapters about handling to avoid potential damage to health and dangerous situations.

3.7.1 Risks through electrical hazards

Electric current

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damaged insulation or individual components can be life-threatening.

- Disconnect the battery from the power supply before any work on the electric system. Verify that the system is disconnected from power supply.
- Switch off power supply before maintenance, cleaning and repair operations and secure the battery against being restarted.
- Never bypass or disable fuses.
- Keep moisture away from live parts.
- The battery must not be opened under any circumstances!.
- Any works on the electrical installations must be carried out by qualified electricians

3.7.2 Risks through thermal hazards

Hot surfaces

CAUTION!
Risk of burns on hot surfaces.

Contact with hot parts may cause burns.

- Do not touch the surface.
- Before every work, make sure that the parts have cooled down to the ambient temperature.

3.7.3 Risks posed by special physical effects

CAUTION!
Danger of injuries caused by special physical effects

Failure to wear appropriate protective equipment may lead to heavy injuries.

- Wear protective gloves
- Take adequate breaks (commercial enterprise)
- Regular medical examinations ‘G20‘ (commercial enterprise)

3.7.4 Risks due to hazardous substances

CAUTION!
Risk of injury due to improper handling of lithium-ion batteries!

Failure to wear appropriate protective equipment can result in serious injury.

- Use personal protective equipment
- Store lithium-ion batteries according to regulations
- Avoid short circuits

CAUTION!
Risk of injury Hazardous substances, such as escaping chemicals or chemical vapors!

- Failure to wear suitable protective equipment can lead to damage to health.
- Use personal protective equipment
- Never touch chemicals
- In case of escaping chemicals or chemical vapors, leave the danger zone immediately!

If the battery cells are damaged, switch off the battery immediately and get help if chemicals are leaking. Never continue to use the battery with a damaged battery cell.

3.7.5 Risks due to work environment conditions

CAUTION!
Risk of injury due to inadequate lighting.

Work in inadequate lighting conditions may lead to heavy injuries.

- Provide for adequate lighting at the workplace.

3.8 Safety

3.8.1 General safety instructions

CAUTION!
Observe the following safety instructions for the safe handling and use of Li-ion batteries.

Failure to comply may lead to

- Irritation
- severe corrosive injuries,
- chemical burns,
- Fire and/or lead to explosions

- ▶ Use the product and accessories only in perfect technical condition
- ▶ Never tamper with or change the product or accessories. The product must not be opened.
- ▶ Do not touch the electrical contacts with your fingers, tools, jewelry, or other electrically conductive objects.
- ▶ Do not short-circuit the outputs of the product.
- ▶ Close the protective caps of the connectors when not in use.
- ▶ The product must not be disassembled, crushed, heated above 60°C or burned.
- ▶ Never expose the product to direct sunlight, increased temperature, sparking or open flame. This can lead to explosions.
- ▶ Keep the product away from moisture and liquids. Moisture ingress can cause short circuits, electric shocks, burns, fire, and explosions.
- ▶ Do not use or store the product in potentially explosive environments.
- ▶ Use the product only within the defined limits of use.
- ▶ Handle the product carefully to avoid damage and prevent the leakage of liquids that are highly harmful to health!
- ▶ Make sure that the product stands securely when using it. Place the product only on a non-slip surface. Avoid protruding the product over an edge.

- Make sure that the cable length of the connected consumer is sufficient, the connecting cable must not be under tension.
- Do not use or charge the product if it has received a blow or is otherwise damaged. Periodically inspect the product for signs of damage.
- Do not use the product as a conductor replacement.
- Do not transport the product on a crane or with lifting equipment.
- Comply with your local regulations for the safe operation of electrical consumers.
- Do not connect defective consumers to the product.
- Do not connect generators to the outputs of the product.
- Charge the product only with the supplied charging cable.
- Make sure the consumer is turned off before connecting the consumer. Always switch off the consumer after use.
- Do not use the product to operate life-sustaining medical consumers.

If the product is too hot to touch, it may be defective. Place the product in a visible, non-flammable place at a sufficient distance from combustible materials. Let it cool. If the product is still too hot to touch after an hour, then it is defective. Please contact the GÖLZ® service.

3.8.2 Safety devices

WARNING:
Danger to life due to defective or bypassed safety devices!

Inoperable, bypassed or disabled safety devices do not protect from hazards and may lead to heavy or fatal injuries.

- Before commencement of works, always make sure that all safety devices are properly installed and functional.
- Never disable safety devices.
- Ensure that the safety devices are always freely accessible.

NOTE!
See safety devices in →"Design and function".

3.9 Spare parts

WARNING:
Risk of injury due to wrong spare parts.

Wrong spare parts can seriously compromise safety and cause damage and malfunction up to total failure.

- As a matter of principle, only original spare parts must be used.

Original spare parts can be obtained via an authorised dealer or directly from the manufacturer.

3.10 Actions in emergency and in case of accidents

Necessary actions

- Always be prepared for accidents or fire.
- First aid facilities (first aid box, cloth, etc.) and fire extinguisher must be close at hand.
- Personnel must familiarise themselves with accident signalling equipment, first aid and rescue facilities.
- Access roads for rescue vehicles must be always kept free.

If the need arises, act properly

- Activate emergency stop immediately
- Initiate first aid measures
- Remove persons affected from the danger area.
- Inform persons responsible at the operation site.
- Alert doctor and/or fire brigade in case of heavy injuries.
- Keep access roads for rescue vehicles free

3.11 Signage

Danger from electric current!

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damage to the insulation or individual components can be life-threatening.

- Disconnect the battery from the power supply before any work on the electric system. Check that no voltage is present!
- Switch off power supply before maintenance, cleaning and repair operations and secure the battery against being restarted.
- If the battery insulation is damaged, switch off immediately and arrange for repairs.
- Never bypass or disable fuses.
- Always use fuses with correct amperage when replacing defective fuses.
- Keep moisture away from live parts.
- Any works on the electrical installations must be carried out by qualified electricians¬.
- Annual check of the electric system according to VDE0701.

Illegible signs

CAUTION!
Risk of injury due to illegible symbols!

Stickers and signs that got illegible, make danger zones insufficiently recognisable and may become incapable of indicating potential injury risks.

- Always maintain legibility of pictograms, safety, warning and operating instructions.
- Immediately replace the pictograms, labels, signs or stickers that became illegible.

3.11.1 Signs and symbols

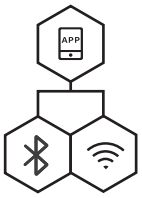
3.11.1.1 BattPak Xpansion2100

CE	CE label		UN38.3	Transport label
RoHS	Restriction of Hazardous Substances Directive		IP67	Protection class
	WEEE-symbol		 Li-ion 00	Recycling-symbol

3.11.1.2 GÖLZ-APP

	Power capacity 2168 Wh 40,15 V, 54 Ah			Battery type Semi solid state Lithium ternary 54 Ah
	Net weight 49.6 pound 22.5 kg			Dimension 22,1 x 10,2 x 16,1 Zoll 562 x 260 x 410 mm
	Cycle life 80 % of battery capacity remaining after 4000 cycles			
	AC INPUT 220-240VAC, 50/60Hz, Max power 1350W			

APP



Bluetooth/WIFI
Via BattPak 3621

Battery

Discharging Temperature
-0.4 to 140°F / -18 to 60°C

Charging Temperature
32 to 104°F / 0 to 40°C

IP67

Protections

Over heat

Short circuit

Over current

Over voltage

Over charging

Over discharging

4 Technical data

4.1 Dimensions

Specification	Value	Unit
Length	560	mm
Width	260	mm
Height	410	mm
Weight	22.5	kg

4.2 Generel information

Specification	Value	Unit
Output voltage	40.15	V
Interrupting voltage battery	47.3	V
Operating life	Ca. 6000	load cycle
Internal impedance	≤50	mΩ
Communication	RS485/RS232	-

4.3 Charging operation

Specification	Value	Unit
Battery voltage	40.15	V
Maximum charging current	33	A
max. AC charging current	8A/230V	A
Overcharge cut-off point	47.3	Vdc

4.4 Information of battery cells and battery

Specification	Value	Unit
Cell type	Nickel-Manganese-Cobalt Accumulator (NMC)	
Cell voltage	3,65	V DC
Cell capacity	54	Ah
Battery voltage	40.15	V DC
Battery capacity	2168	Wh

4.5 Connections

	Output	Input
Connections	1x Extension connection	1x 230V AC
		1x AC-IN

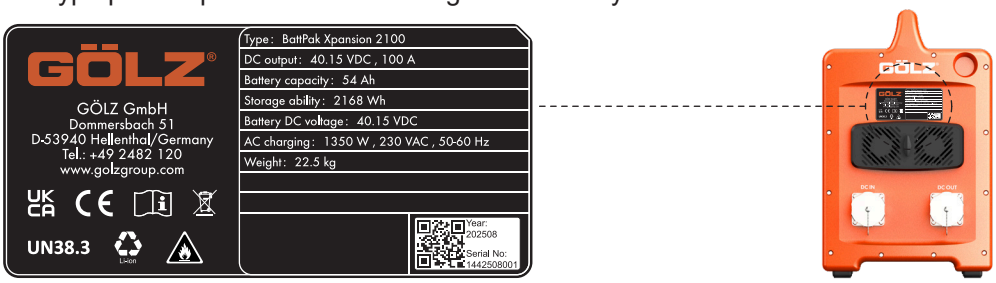
4.6 Operating conditions

Working zone

Specification	Value	Unit
Ambient temperature when working	-18…60	°C
Storage temperature	-18…40	°C
Battery temperature at the start of charging	0…40	°C
Relative air humidity, maximum	15 – 75 (without condensing)	%
Conditions	Avoid direct impact of dampness, dust and frost. Do not operate in strong electric and magnetic fields! Do not operate the machine tool in explosive atmosphere!	

4.7 Type plate

The type plate is placed on the housing of the battery.



4.8 Installation site requirements

The floor surface must:

- have sufficient load bearing capacity,
- be slip proof,
- be level.

Installation conditions

Choose the installation site as per space requirements according to the technical data.

NOTE!
The machine is designed for use in daylight. In case of work zones with poor or no lighting, ensure sufficient lighting of the workplace.

4.9 Storage requirements

Storage conditions

As a matter of principle, the machine, its components, assemblies or parts must be only stored in the following conditions:

- do not store outdoors
- store in dry and dust-free place
- do not expose to aggressive media
- protect from solar radiation
- avoid mechanical vibrations
- storage temperature range -18 to 40°C
- relative air humidity: max. 75%.
- Store the product out of the reach of children and unauthorized persons.
- Do not store the product in the discharged state for long periods of time. This could lead to deep discharge. Charge the product at least once every three months.

If stored for more than 2 months, regularly check the general condition of all parts and packaging. Also check the charge level of the Battpak Xpansion. If necessary, refresh or renew the preservation and load the Battpak Xpansion.

5 Design and function

The BattPak Xpansion2100 is used to expand the capacity of the Battpak 3621 via the expansion port and the supplied expansion cable. The product consists of a housing, the lithium-ion battery with built-in technology and connections, as well as carrying handles.

5.1 Scope of delivery and responsibility

The machine was developed and manufactured under sole responsibility of Gölz GmbH.

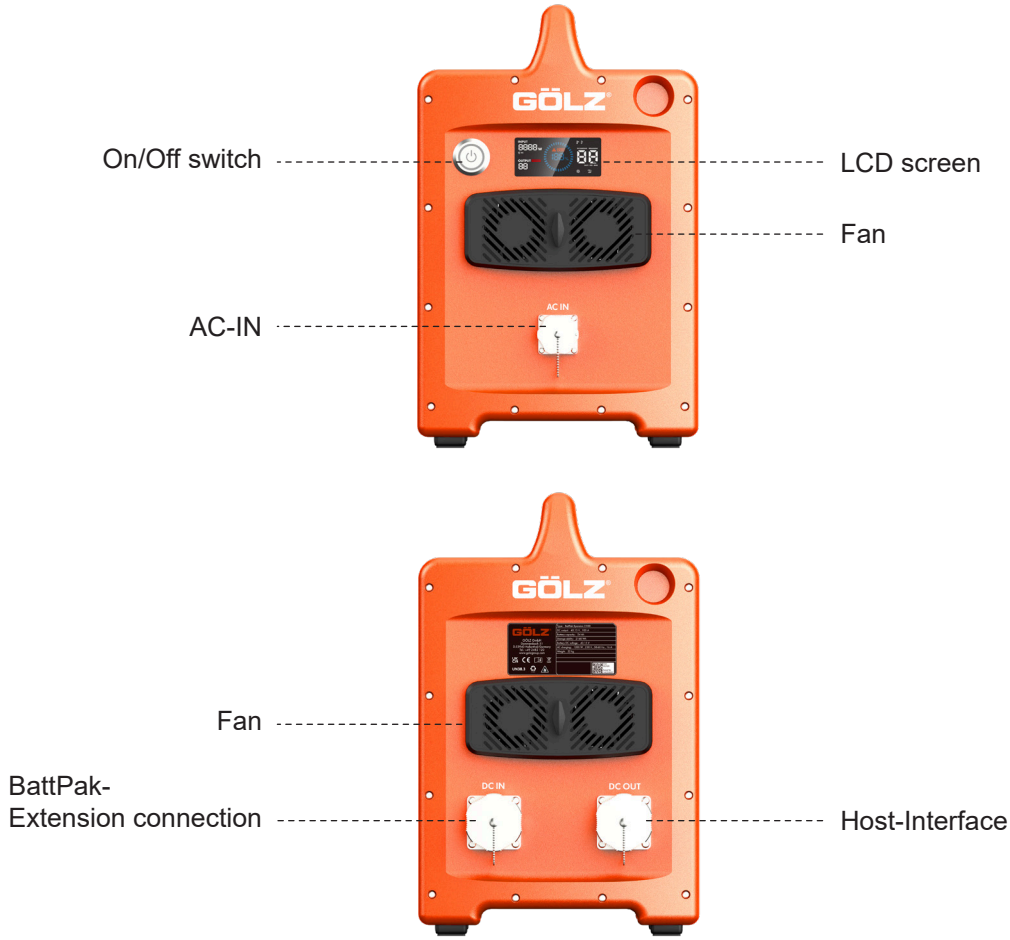
Upon transfer to the operator, the responsibility for safe handling and instruction of the personnel passes to the operator.

The manufacturer offers training on the machine.

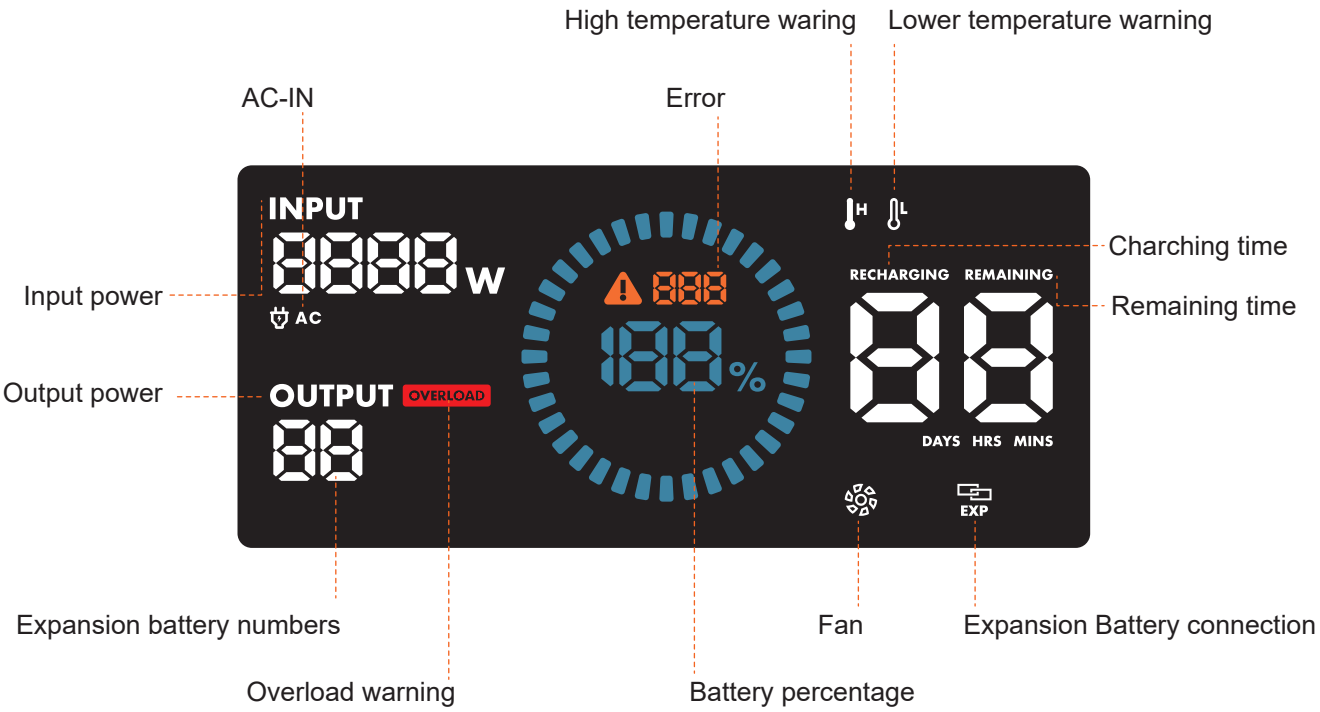
The scope of delivery includes the following components:

Components	Quantity
BattPak Xpansion2100	1
Technical documentation	1
Connection cable	1
Charging cable	1

5.2 BattPak Xpansion2100



LCD Layout



Housing

The housing (1) protects the electronics and the battery from physical and environmental influences.

Plugs

The various battery connections are used to charge the battery and connect the battery extension to a battery.

Battery

The battery cells are enclosed in an impact-resistant housing. They are used to increase the capacity of the BattPak 3621.

Display

The battery display shows all relevant info about the battery via LCD display.

5.2.1 Functional description

By connecting the battery via the extension connection and then switching it on, the power supply is enabled up to the BattPak 3621. The BattPak3621 can now be switched on and a device can be operated.
All relevant information about the BattPak Xpansion2100 is shown on the LCD display on the front.

6 Transport & packaging

6.1 Transport safety information

ATTENTION!
Damage through improper transportation!

Improper transportation can result in considerable damage of the transported goods and objects in the vicinity.

- Always proceed with the utmost care and caution when loading and unloading and transporting goods within the company.
- Pay attention to the instructions and symbols on the packaging.
- Always remove transport locks only during installation.
- Transport the appliance only when it is switched off.

Observe your local transport regulations for batteries!

6.2 Transport inspection

Inspect the condition of the transported goods immediately upon delivery for completeness and damage.

In the event of externally recognisable damages:

- ▶ do not accept the delivery or accept it only conditionally,
- ▶ record the scope of the damage in the transport documents and indicate it in the carrier's consignment note,
- ▶ lodge complaint.

NOTE!
Claim any defect immediately upon delivery of the transported goods!
Claims regarding transport damage can only be lodged within valid complaint periods.

6.3 Transport symbols

On the outside of the transported goods, there are symbols corresponding to the content, which must be strictly observed during transportation and storage.

Meaning of the transport symbols

The following transport symbols can be placed on the transported goods:

	**This side up** The arrowheads indicate the top end of the transported goods. These should point upwards otherwise the content can be damaged.		**Keep dry** Protect the transported goods from dampness and keep them dry.
	**Anchor point** Only attach lifting tackle to the indicated points.		**Centre of gravity** Indicates the centre of gravity of the transported goods. Pay attention to the centre of gravity position when handling the goods!

6.4 Transport and storage

Handling packaging

The product is packed in a safe and environmentally sound manner for the anticipated transport conditions. The packaging protects the parts up to the beginning of assembly from damage and corrosion.

- Only remove packaging and transport locks before assembly.
- Keep the packaging carefully! In case of repair, the BattPak Xpansion2100 must be returned in its original packaging!

ATTENTION!
Environmental damage through improper disposal!

To return your BattPak Xpansion2100 for repair, it must be repacked in its original packaging. Therefore, please keep the original packaging carefully!

Transport of the machine

ATTENTION!
Damage through improper transportation!

Improper transportation can result in considerable damage of the machine and objects in the vicinity.

Before every transport:

- Repack the BattPak Xpansionin its original packaging.
- Transport the product only in the transport position and only when switched off.

The product can be transported by one person using the transport handles.

NOTE!
The product is not designed for crane transport. There are no appropriate load suspension points on the product.

- Observe your local transport regulations for batteries.
- Batteries may not be sent by post. Contact a shipping company if you want to ship undamaged batteries.
- Inspect the product for damage before each use, as well as before and after prolonged transport.
- The product may not be transported on a passenger aircraft. If necessary, contact the airline.

Storage oft he product

Store the product in the following conditions:

- indoors only,
- store in dry and dust-free place,
- do not expose to aggressive media,
- protect from solar radiation,
- avoid mechanical vibrations,
- storage temperature: -18 to 40 °C,
- relative air humidity: max. 75%.

- Store the product out of the reach of children and unauthorized persons.
- Do not store the product in the discharged state for long periods of time. This could lead to deep discharge. Charge the product at least once every three months.
- If stored for more than 2 months, regularly check the general condition of all parts and packaging. Also check the state of charge of the batteries. If necessary, refresh or renew the preservation and load the Battpak (at least 80%).
- Store the product only when it is switched off.

7 Installation and first commissioning

7.1 Installation safety information

WARNING!
Risk of injury due to improper installation!

Improper work performance and installation errors can result in heavy injuries during work and life-threatening situations during commissioning and operation.

- Any installation works must be only carried out by trained personnel authorised by the operator.
- Sufficient assembly freedom must be ensured before commencement of works.
- Always keep the working zone tidy and clean!

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damaged insulation or individual parts can be life-threatening.

- Connection, inspection and measurements of electric parts must be carried out by qualified electricians.
- In case of defective electric components switch off immediately and arrange for repairs.
- Keep humidity away from live parts.

7.2 Location

Place the product in a suitable place. Check the safe stand before commissioning.

Personal protective equipment (in commercial sector)

- Protective clothing
- Protective gloves
- Safety shoes

7.3 Connection

Before connecting the machine to the power source, make sure that:

- the product is connected to a BattPak3621 using the supplied connection cable
- the power supply line is grounded according to the safety provisions
- the wire size of the extension cord is sufficient, H07RNF 3x2.5 mm² up to 50m for 230V

NOTE!

Power losses may occur if the cord length >50m!

Personal protective equipment (in commercial sector)

- Protective clothing
- Protective gloves
- Safety shoes
- Ear protectors
- Protective goggles

7.4 First commissioning and acceptance, general

DANGER!
Risk of injury during the first commissioning. Therefore:

- Before connecting consumers to the battery, make sure that they are switched off.
- Make sure that the machine is not placed on slopes or construction pits
- Make sure the surface is even
- Ensure sufficient lighting
- Keep environment clean and free from objects and cables
- Make sure, there are no unauthorised persons in the vicinity of the machine

The BattPak Xpansion2100 is delivered fully assembled.

8 Operation

8.1 Operation safety information

WARNING!
Risk of injury due to improper operation!

Improper operation may lead to heavy injuries.

- The product may only be operated by trained personnel authorised by the operator.
- Before every work, make sure that the safety devices are correctly installed and function without flaws.
- Never disable safety devices.
- Always keep the working zone tidy and clean! Objects, parts, workpieces, tools and cleaning devices loosely lying around are accident sources.

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damaged insulation or individual parts can be life-threatening.

- In case of defective electric components switch off immediately and arrange for repairs.
- Keep humidity away from live parts.

Meaning of the transport symbols

- ▶ Instructed Personnel

Personal protective equipment (in commercial sector)

- ▶ Protective clothing
- ▶ Protective gloves
- ▶ Safety shoes
- ▶ Ear protectors
- ▶ Protective goggles

8.2 Start-up preparation

To safely use the product as intended, the following preconditions must be met:

- ▶ the machine stands firmly
- ▶ the machine has been checked for damage, loose screw connections and integrity

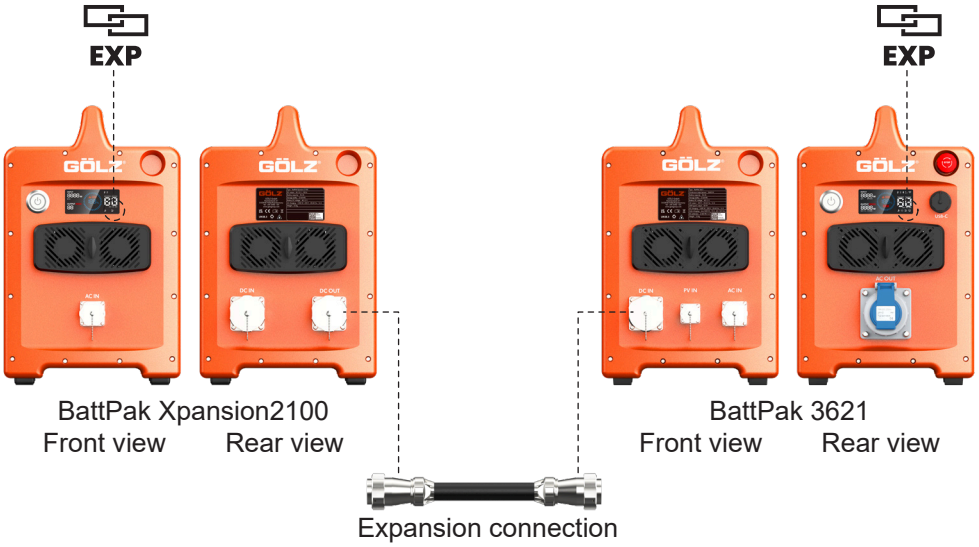
To expand the capacity of BattPak 3621, please follow the steps likes below:

1. Ensure both BattPak 3621 and BattPak Xpansion2100 are switched off below starting the connection.

BattPak Xpansion2100
Front view Rear view

BattPak 3621
Front view Rear view

2. After the connection of BattPak 3621 and BattPak Xpansion2100, ensure CONNECTION ICON displayed on both LCD screen.



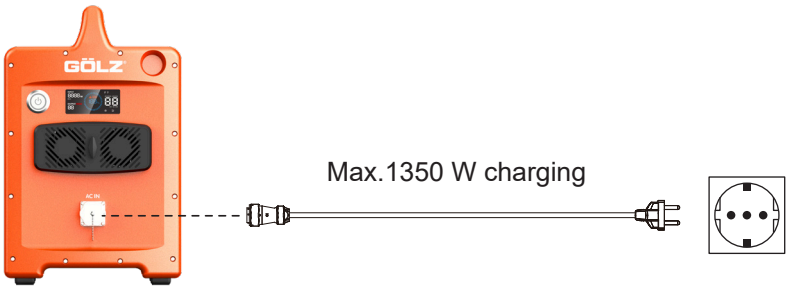
3. During the charging or discharging process, do not directly connect or disconnect the BattPak or the BattPak Xpansion.
4. Do not touch the metal pins of the BattPak Xpansionor BattPak interface with your hands or other objects. If necessary, only use a soft dry towel for cleaning.

8.3 Charging the BattPak Xpansion2100

NOTE!

Fully charge your BattPak Xpansion2100 before use or storage. If the LCD screen shows a charge level below 20%, please charge it as soon as possible using an available power source.

AC charging



Please use the AC charging cable provided inside the package, plug it directly into the AC wall socket, and ensure that the wall output voltage is 230V.

GÖLZ shall not be responsible for any consequences resulting from failure to follow the instructions, including but not limited to charging with other AC charging cables.

In the process of AC charging the BattPak Xpansion2100, after connecting with AC power, the charging will be turned on regardless of whether the power button is on or off, and the LCD screen will light up until fully charged and then turn off.

In the process that BattPak Xpansion2100 is charging the BattPak 3621 host, meanwhile the BattPak Xpansion2100 can be charged with AC power simultaneously. According to the order in which the low BattPak Xpansion2100 starts charging first, when the voltage difference of the other BattPak Xpansion2100 is within 0.5V, it can be connected for simultaneous charging. Follow the same logic until the BattPak 3621 is finally connected for charging and fully charged at the same time.

8.4 ON/OFF switch

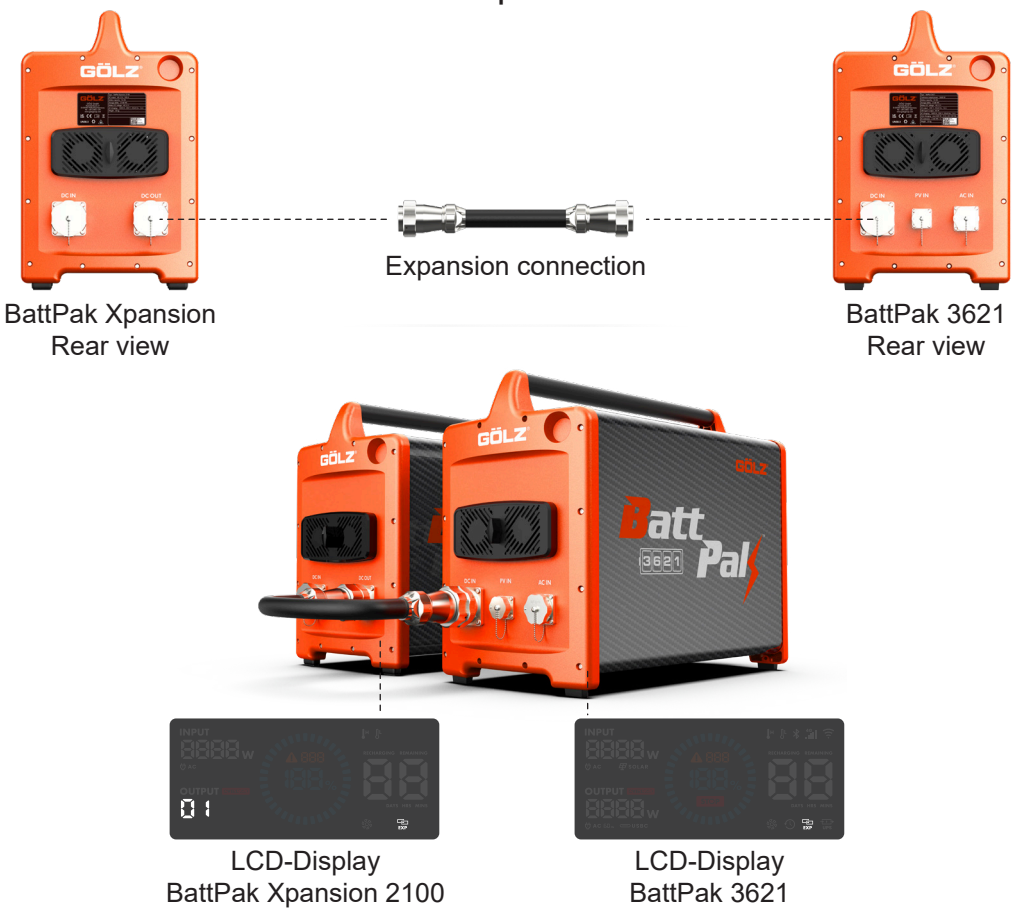
Press the power button, the power button indicator lights on, and after 5s, the BattPak Xpansion2100 is on, and the LCD display screen lights up; In this case the communication between this BattPak Xpansion2100 and the host is connected, and power supply to the host can be achieved. If the communication with the host is not connected, it will automatically shut down after 10 min.

Press power button to shut down the BattPak Xpansion2100, the button indicator light goes out, and after 5s, the system is powered off, the LCD display goes out, the output interface is off, communication stops, and the BattPak Xpansion2100 enters low-power consumption mode.

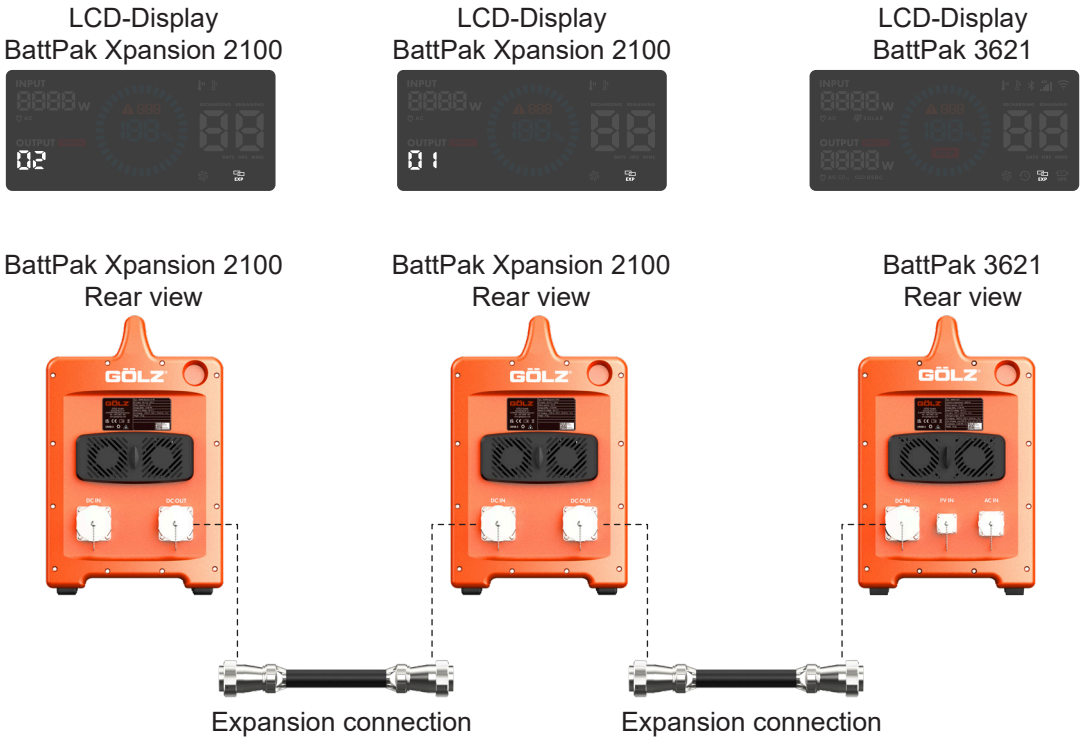
During discharging, the BattPak Xpansion2100 will follow the order that the high voltage BattPak Xpansion2100 starts discharging first, and when the voltage difference with 2nd high voltage BattPak Xpansionis 0.5V, the 2nd high voltage BattPak Xpansionstarts discharging simultaneously, following the same logic until the BattPak Xpansionis connected and discharged, and finally all fully discharged simultaneously.

8.5 BattPak XpansionConnection Policy 2100

8.5.1 BattPak 3621 and one BattPak Xpansion2100

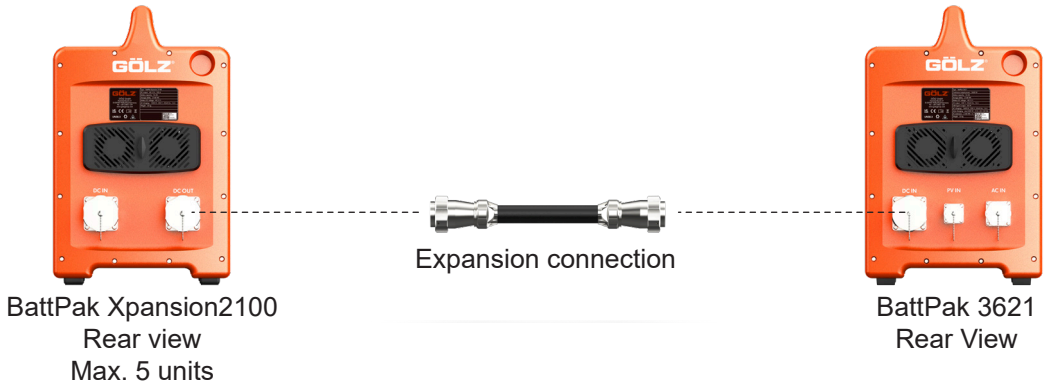


8.5.2 BattPak 3621 and two BattPak Xpansion2100



8.5.3 BattPak 3621 +Max 5 units of BattPak Xpansions 2100

Press the power button to turn on the machine. Power on indicator goes on, then AC output is ready.
Press the power button again to turn off the AC output.



9 Maintenance & cleaning

9.1 Maintenance safety information

WARNING!
Risk of injury due to improper maintenance!

Improper maintenance may lead to injuries.

- Any maintenance works must be only carried out by the service department of GÖLZ GmbH.
- Sufficient assembly freedom must be ensured before commencement of works.

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damage to the insulation or individual components can be life threatening.

- Before cleaning, switch off the battery and secure it against being switched on again, and also close the protective caps of the sockets.
- Keep moisture away from electrical components.

9.2 Maintenance plan

Maintenance works necessary for optimum and trouble-free operation are described in the following sections.

- If an increased wear of parts is revealed by regular inspections, reduce the maintenance intervals!
- Draw up a maintenance log after every maintenance! The log assists in error analysis, enables adjusting the intervals to actual usage conditions and validating guarantee claims.
- If you have any queries on maintenance works and intervals: contact manufacturer.

Specification	Maintenance work	Unit
Before every commissioning	Visual inspection - the entire product	Operating personnel
	Visual inspection - the electrical connections	Specialist personnel
After completion of work	Clean - Entire product	Operating personnel
	Clean - Housing	Specialist personnel
yearly	Carry out a legal safety check in the case of - the entire product	Qualified electricians
in case of an error	Visual inspection - the entire product	Operating personnel
	Visual inspection - Connections	Specialist personnel

9.3 Description of the maintenance works to be carried out by the operator

ATTENTION!

Cleaning by a high-pressure cleaner will damage the product.

ATTENTION!

Foaming and cleaning with water will damage the machine.

- Replacing the fan

9.4 Steps after completing maintenance

After completion of the troubleshooting and before switching on, follow the following steps:

1. Check for tightness all threaded joints previously detached.
2. Check the proper installation of all previously removed protective devices and covers.
3. Make sure that all tools, materials and other equipment have been removed from the working zone.
4. Clean the working zone and remove any spilled substances such as liquids, processing materials or similar.
5. Make sure that all safety devices of the system function properly.

10 Errors

10.1 Maintenance safety information

WARNING!
Risk of injury due to improper troubleshooting!

Improper actions in the course of troubleshooting may lead to heavy injuries.

- Any repair works must be only carried out by the GÖLZ Service.
- Sufficient assembly freedom must be ensured before commencement of works.
- Always keep the working zone tidy and clean! Objects, parts, workpieces, tools and cleaning devices loosely lying around are accident sources.
- Check correct assembly of spare parts if these have been replaced. Fit properly all fastening elements. Observe screw tightening torques.
- Before recommissioning, make sure that all safety devices are properly installed and functional.

WARNING!
Risk of injury resulting from unauthorised restarting!

When working on individual components, people can be injured due to unexpected switching on of the power supply of the connected devices.

- Before working on any individual parts, switch off the machine and secure it against being restarted.

DANGER!
Danger to life from electric current!

Touching live parts leads to death. Damaged insulation or individual parts can be life-threatening.

- Switch off the battery before maintenance and repair operations and secure it against being restarted.
- Keep humidity away from live parts.

10.2 Actions in case of errors

Basically, the following applies:

1. In the event of malfunctions that pose an immediate danger to persons or property, trigger emergency stops immediately.
2. Inform those responsible at the scene of the incident.
3. Depending on the type of malfunction, the cause should be determined and eliminated by responsible and authorized specialists.

10.3 Troubleshooting table

Components	Components	Components
AC H	High temperature protection for AC IN	After the product cools down, it will automatically resume normal operation.
AC OVERLOAD	Over-load protection for AC OUTPUT	Remove the overloaded device, press the power button again, and it will automatically resume normal operation. Electrical appliances should be used within their rated power.
⚠	Machine fault warning	If a fault warning appears on the screen and does not disappear after restarting, please stop using it immediately and contact GÖLZ customer service.

10.4 Steps after troubleshooting

After completion of the troubleshooting and before switching on, follow the following steps:

1. Make sure that all tools, materials and other equipment have been removed from the working zone.
2. Clean the working zone and remove any spilled substances such as liquids, processing materials or similar.
3. Make sure that all safety devices of the machine function properly.

11 Disposal

After the design service life is over, the machine must be disposed of in an environmentally friendly manner.

In many countries, GÖLZ takes back your old appliance for recycling.
Unless a take-back or disposal agreement has been made, dismantled components shall be recycled:

- Scrap residual metallic components.
- Giving plastic parts for recycling.
- Dispose of remaining components sorted according to material properties.

EU countries only
Electric waste is recyclable and must not be disposed of in the household waste!!
According to the European directive 2012/19/EU on electrical and electronic waste and version transposed into national law, used power tools must be collected separately and sent for recycling in an environmental-friendly manner.

ATTENTION!
Environmental damage resulting from improper disposal!

Wrong or negligent disposal may result in significant environmental pollution.

- Electrical scrap, electronic components, lubricants, operating and other auxiliary materials must be disposed of by specialised companies.
- In case of hazardous substances, treatment and disposal provisions of the material safety data sheets must be taken into consideration.
- In case of doubts, consult the manufacturer or local municipal authorities or specialised disposal companies on the environmentally safe ways of disposal.

12 Index

EU conformity declaration

GÖLZ® GmbH
Dommersbach 51
D-53940 Hellenthal
Germany

declares under sole responsibility that

Model:	**Energy storage system**
Manufacturer:	**GÖLZ**
Type:	**BattPak Xpansion2100**

comply with the relevant provisions of the Directives

2014/30/EU	**UN38.3**
2014/35/EU	**2011/65/EU**
2012/19/EU	

and has been developed and fabricated in compliance with the following standards valid as at the production date:

DIN EN 62133-2:2022-12; VDE 0510-82:2022-12

DIN EN IEC 62619:2023-08; VDE 0510-39:2023-08

DIN EN IEC 61000-6-4:2020-09; VDE 0839-6-4:2020-09
DIN EN IEC 61000-6-2:2019-11; VDE 0839-6-2:2019-11

Technical documentation kept by:

GÖLZ® GmbH
Development and design

Year of construction and machine number are indicated on the unit.

Hellenthal, 23.08.2025
GÖLZ® GmbH

Managing Director