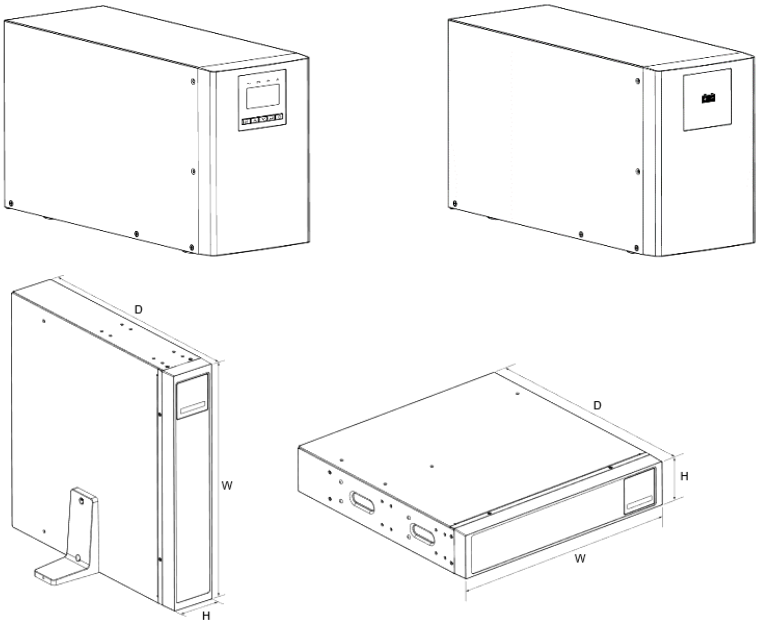
EFFEKTA®

Uninterruptible Power Supply

ADIRA 700VA - 3kVA
(Tower and Rack/Tower, including the XL- and short-versions)

User Manual V 1.1



Item number: ACX11A1Sxxxxxxxx
ACX11A1SxxxxxxXL
ACX11A1Txxxxxxxx
ACX11A1TxxxxxxXL

English Operating Manual (translation)

Legal Notice

© by EFFEKTA Regeltechnik GmbH

This document is only intended for the user and their staff. The content of this document (text, figures, drawings, graphs, plans, etc.) may not be, as a whole or partially, reproduced or distributed without our written consent or utilized without authorization for the purpose of competition or issued or made accessible to third parties.

The publication and the copyright for this document belong to the company:

EFFEKTA Regeltechnik GmbH

Rheinwaldstrasse 34
78628 Rottweil, Germany

Telephone: + 49 (0) 741 17451 - 0
Telefax: + 49 (0) 741 17451 - 22
Email: info@effekta.com
Internet: www.effekta.com

Operating Manual: V 1.1
Language: English
Date of issue: 08/2023

We reserve the right to make changes to the design and device that will improve the system, the production process, or the product.

Table of Contents

1. Introduction 5
1.1 Preface 5
1.2 Validity 6
1.3 Storage 6
1.4 Abbreviations, terms and symbols 6
1.5 Information obligation 9
1.6 Warranty conditions 10
1.7 Limitation of liability 11
2. Safety instructions 12
2.1 Introduction 12
2.2 Proper use 12
2.3 Prevention of personal injury / property damage 13
2.4 Environmental protection 13
2.5 Transport and storage 13
2.6 Positioning 14
2.7 Connection 15
2.8 Operation 16
2.9 Working with accumulators 16
2.10 Maintenance, service and malfunctions 17
3. UPS device description 18
3.1 Topology and operating modes 18
3.2 The device series, format and housing sizes 22
3.3 The UPS and its components in detail 24
4. Storage and unpacking 35
4.1 Storage of the UPS 35
4.2 Transport to the installation site 35
4.3 Unpacking and positioning the UPS 36
4.4 Scope of delivery 37
5. Installation and connection of the UPS 39
5.1 External bypass 41
5.2 Connection preparations 41
5.3 Connecting the UPS device 42
6. Communication 49
7. Device operation and service 54
7.1 Operation and performance of the UPS 54

7.5 Settings for the UPS device ... 58
8. Initial operation of the UPS ... 60
9. Error diagnosis ... 61
10. Troubleshooting ... 64
11. Service hotline ... 64
12. Maintenance and service ... 65
12.1 Measuring the support time (autonomous time) ... 65
12.3 Maintenance and service contracts ... 69
12.4 Service log ... 70
13. Technical data ... 71
13.1 ADIRA T ... 71
13.2 ADIRA RT ... 72
14. Scope of delivery ... 74
15. Optional accessories ... 75
15.1 External battery bank and connection cable ... 75
15.2 External bypass ... 75
15.3 Communication adapter SNMP ... 76
15.4 Communication adapter, relay card (Z0C/AS400) ... 76
16. Wear parts list ... 77
17. Declaration of conformity ... 78

1. Introduction

1.1 Preface

Dear User,

This manual is required for the operation of the uninterruptible power supply described herein. This operating manual should provide you with support for working responsibly and give basic information about the uninterruptible power supply, namely how it works, its application, and, in addition, what steps to take in the event of malfunctions. Furthermore, this operating manual contains instructions for the transport and storage as well as for the handling and installation of the uninterruptible power supply.

The planning guidelines in this operating manual only relate to special requirements and characteristics of the uninterruptible power supply. All national and local provisions and regulations for electrical installations must be adhered to during the installation process. The same applies for the operation of the device.

The content of this operating manual may change due to technological progress. We have done our best to present the content accurately and comprehensibly. If, however, we have made errors, we would be grateful if you inform us.

We do not assume any liability for errors in this operating manual or any consequences resulting thereof.

The uninterruptible power supply is intended to protect sensitive electronic systems and equipment from interferences that could occur due to poor electrical quality or network failures.

Please read this operating manual carefully and take particular note of the safety instructions!

If you have questions about the device, the technical supervisor at your company or our employees will gladly assist you.

Sincerely,
EFFEKTA Regeltechnik GmbH

1.2 Validity

The descriptions in this operating manual relate solely to the uninterruptible power supply (UPS) defined in the technical data as a whole or as it refers to modules, components, and individual parts that were developed and built by **EFFEKTA Regeltechnik GmbH** (⇨ Chapter 133 Technical data).

Read this documentation carefully and familiarize yourself with the product before beginning with its operation.

1.3 Storage

The operating manual of this device must be stored in the vicinity of the device at all times so it is immediately available if needed.

Pass this manual on to any subsequent users of the products.

1.4 Abbreviations, terms and symbols

In this manual, the abbreviation **UPS** stands for: uninterruptible power supply.

Typically, **accumulators** are used for energy storage of the UPS device. Colloquially, these are referred to as battery banks or batteries. A **battery bank** is then the term for the centralization of several accumulators into a group that forms the energy storage.

Labels of Danger, Warning and Attention are explicitly marked with the respective symbols (pictograms) and must be adhered to without fail. See the following list and explanations:

Danger / Warning levels / Attention:

DANGER!

Texts marked with “DANGER!” provide a warning about dangers. If accident prevention measures are not taken, these dangers **result in** serious (irreversible) injuries or even death!

WARNING!

Texts marked with “WARNING!” provide a warning about hazards. If accident prevention measures are not taken, these hazards may **result in** serious (irreversible) injuries or even death!

CAUTION!

Texts marked with “CAUTION!” provide a warning about hazards. If accident prevention measures are not taken, these dangerous situations may result in slight or medium reversible injuries.

ATTENTION!

Texts marked with “ATTENTION!” contain very important instructions for situations that, if accident prevention measures are not taken, may result in damage to the product and/or its functions or an object in its vicinity.

This symbol indicates text that contains notices or instructions/comments or advice.

Warning about danger areas:

General warning about danger areas!

Specific warnings:

Warning about dangerous electrical voltage!

Warning about proper handling of accumulators!

Instruction symbols:

Take note of the documentation(s) and/or instructions provided!

Disconnect before operation!

Environmental symbols:

Indicates instructions for recycling.

Indicates components that are subject to the Electronic Swap Regulation.

Indicates components or parts that must be disposed of properly. Do not dispose of these in the household waste.

Text symbols:

●	This dot indicates descriptions of activities that should be carried out.
✓	A requirement that must be fulfilled, for example: ✓The circuit breaker is “OFF.”
–	This dash marks specification lists.
⇨	This arrow marks a cross reference. If a cross reference to another chapter is necessary in the text, this is shortened for clarity. Example: ⇨ OM, 2 Safety Instructions This means: see Operating Manual, Chapter 2 Safety Instructions. If the cross reference refers to a page, figure or position number, this information is added at the end of the cross reference. Example: ⇨ Fig. 4-4, Pos. 1 This means: see (Chapter 4 in this manual) in Figure 4, position number 1.
(3)	Numbers in brackets refer to the positions in the figures.
**	Annotations within the text are marked with ** and explained accordingly.

1.5 Information obligation

This operating manual must be read and understood by all persons and qualified personnel working with this device (of the system).

This applies, in particular, to maintenance, operating and cleaning personnel including persons responsible for transportation and/or disposal.

EFFEKTA Regeltechnik GmbH is not liable for damage incurred or caused by staff who have not been trained or who have been insufficiently trained.

1.6 Warranty conditions

The receipt of delivery is considered to be the record for the initial purchase and should be kept in a safe place. It will be necessary for making use of the warranty. If the product is passed on to another user, this user has the right to the warranty for the remainder of the warranty period. The purchase receipt as well as this declaration should also be given to the new owner if the device is passed on.

We guarantee that this device, upon delivery, is in a functional state and technically conforms to the descriptions in the enclosed documentation.

The warranty period for UPS devices corresponds to the minimum periods stipulated by law.

This warranty ceases to apply in the following cases:

- if the defect is caused by: freight damage, accident, natural disasters, misuse, vandalism;
- in cases of improper use, defective maintenance, or incorrect repair by third parties;
- in the event of changes, unauthorized intervention, improper operation, false installation, or other modifications we have not approved;
- in the case of improper use such as the connection of the device to unsuitable energy sources or unsuitable loads or general use in an unsuitable environment, etc.;
- in the event of failure to follow instructions in the provided documentation;
- for any defects caused by a lack of due care, e.g. splash water etc.;
- in the event that the product is incompatible due to possible technical innovations or regulations (policies) that occur after the purchase;
- in the case of malfunctions or damage caused by the connection of incompatible devices or accessories;
- in the event of developments that are related to the normal ageing process of the product (wear parts);
- in the event of defects that were caused by external fixtures, e.g. electrical outlets;
- in the event of failure to provide due maintenance and care for the product.

The warranty period for replaced and/or repaired parts as part of this warranty expires together with the original warranty for the product.

Devices that are supplied without accessories are replaced without accessories. The return of the device is only accepted if it is returned in the original packaging.

Incurred transport costs are generally not included in the warranty.

In general, you shall bear the cost of repair and exchange of the device.

We are not liable for damage or consequential damage, whether caused directly, unintentionally or by negligence.

EFFEKTA Regeltechnik GmbH provides neither explicit nor implicit warranties related to this device and its quality, performance, saleability or suitability for a certain purpose. In some countries, the exclusion of implicit warranties is not permitted by law. In this case, the validity of all explicit and implicit warranties is limited to the warranty period. With the expiration of these periods, all warranties lose their validity. In some countries, a limitation of the validity period of implicit warranties is not permitted by law so that the aforementioned limitation will not take effect.

1.7 Limitation of liability

Claims for damage compensation are excluded unless they involve intent or gross negligence by EFFEKTA Regeltechnik GmbH or its employees. This does not affect the liability according to the Product Liability Act. Under no circumstances are we liable for:

- claims that third parties make against you due to losses or damage;
- loss or damage of your records or data or the costs of recovering this data;
- subsequent economic damage (including lost profits or savings) or collateral damage, even in the event we were informed of the possibility of such damage.

Under no circumstances is EFFEKTA Regeltechnik GmbH responsible for any accidental, indirect, specific, consequential or other damages of any kind (including, without any limitation, damages related to a loss of profits, interruption of business, loss of business information or any other losses) that result from the use of the device or are in any way associated with the device whether they are based on the contract, damage compensation, negligence, strict liability or other claims, even if EFFEKTA Regeltechnik GmbH was informed of the possibility of such damage in advance. This exemption also includes any liability that can result from the claims of third parties against the initial purchaser.

In some countries, the exemption or the limitation of collateral or consequential damage is not permitted by law so that the aforementioned declaration does not enter into force.

2. Safety instructions

2.1 Introduction

The UPS is a device that has been produced according to the rules and regulations of technology for an uninterruptible power supply.

The device is safe when used properly and in compliance with the safety requirements and instructions provided in this operating manual.

2.2 Proper use

The UPS and its related components may only be used for purposes according to its design for the supply of electrical loads from a primary power source and for the short-term supply of loads from a secondary power source which do not exceed the nominal power in its entity.

Any other use is considered **improper** and can lead to injury or person or property and/or damage to the device!

WARNING!

The device is not designed for use:

- in explosive;
- in dusty or humid;
- in radioactive or
- in biological or chemically contaminated atmospheres!

For information about the respective IP protection class of the device, please contact our service centers.

WARNING!

In addition, the device class must be taken into account with regard to “electromagnetic compatibility” (EMC).

This is a UPS device of **Class C2,** which is designed for use in commercial and light industry companies. In residential settlements, this can cause radio interference, and it can be necessary that the operator is required to switch off the UPS until the problem with radio interference is rectified. This may require qualified personnel or an organization trained in EMC-related issues.

2.3 Prevention of personal injury / property damage

- Please read this operating manual carefully to familiarize yourself with the device and its function. Under no circumstances should you ignore the safety information.
- Pay particular attention to the information on the installation and initial operation of the device.
- Operate this device only in the proper and appropriate manner and always within the mandated performance parameters (⇨13 Technical data).
- Perform only the maintenance and service work that is described in the documentation. Observe the prescribed instruction steps. Use only original replacement parts from EFFEKTA Regeltechnik GmbH.

2.4 Environmental protection

Return the product to **EFFEKTA Regeltechnik GmbH** after the end of its service life. We will ensure that it is disposed of in an environmentally friendly manner.

2.5 Transport and storage

The UPS can only be transported to the intended location in the original packaging. The same applies to transfers or returns.

The packaging serves as excellent device-specific protection. Conversely, all devices damaged during transport must be inspected by EFFEKTA

Regeltechnik GmbH before the initial operation. The same generally applies for any damages to the device.

Should the device be in storage for more than 4 months, charging the battery bank of the UPS system becomes imperative. For more information, see

⇨ 4. Storage and unpacking

WARNING!

Due to the possibility of existing energy storage (accumulators) within a UPS, devices must generally be inspected by EFFEKTA Regeltechnik GmbH or a qualified service center for transportation damages. Overall, transport damages present a high risk that the energy storage units and/or their electrical connections have been affected. As a result, short circuits and/or the leaking of electrolytes cannot be ruled out. For this reason, the unit must be isolated until an inspection has been performed.

Furthermore, the UPS device should not be transported or stored in an upside-down position.

2.6 Positioning

Operate the UPS only in well-ventilated rooms, observing the specified ambient temperature range (according to ⇨133 Technical data).

The UPS should not be placed in the vicinity of heat sources.

Always take the operating conditions into account when positioning the device.

Maintain the required minimum distance to adjacent equipment and walls for ventilation purposes (see ⇨133 Technical datand ⇨ 5 Installation and connection of the UPS). Ensure that the necessary air circulation is provided.

Never place the device in a damp environment. Liquids must, as a rule, be kept away from the UPS device.

Due to major temperature differences, the formation of condensation may occur after the positioning of the UPS. Therefore, an acclimatization period of at least two hours must be observed before any further steps are taken. Make sure the temperature adjustment has been completed and that any internal and external surfaces of the devices with condensation have dried completely.

WARNING!

Never operate the UPS in an explosive and/or unventilated setting.

2.7 Connection

Always use the connection terminals provided for the purpose of connecting the UPS.

DANGER!

To avoid electrical hazards, the connection of the device must only be made under de-energized conditions.

The PE (protective earth) conductor must be connected without fail. The UPS device, as well as the connected loads, must not be used under any circumstances without the PE conductor!

The UPS output is supplied with power even in the event of a power outage; according to the provisions covered in EN62040-1, the lines and power outlets supplied by the UPS must be clearly labelled!

In addition, the following points must always be observed when connecting the UPS:

- Install all connections properly and keep the cable length as short as possible;
- Only use suitable power cables when connecting the UPS to the mains power supply and pay attention to the required current carrying capacity;
- Only use suitable power cables when connecting loads or appliances to the UPS and pay attention to the required current carrying capacity;
- The safeguarding of any load must always be performed immediately in front of a load and should never be performed centrally in front of the UPS;
- Never operate any household devices or tools such as, e.g. fan heaters, vacuum cleaners, electric drills, hairdryers, toasters, etc., by means of the UPS;
- Do not connect any loads or appliances to the UPS that could overload the device;
- In general, only use appropriate tools for the installation.

2.8 Operation

Only qualified personnel are permitted to access and operate the device.

WARNING!

In all situations, it must be kept in mind that the UPS includes an energy storage unit or is connected to an external energy storage unit. This means that the UPS outlet could be carrying a current even when the UPS has already been disconnected from the mains power supply.
Consequently, the UPS output is guaranteed to be de-energized only when the device has completely shut down and has been disconnected from the mains power supply.

2.9 Working with accumulators

When handling accumulators, there is always a risk of electric shock, burns and/or chemical burns.

For this reason, unauthorized personnel should not have access to accumulators.

DANGER!

Accumulators and their connections can cause electric shock.

In the event of a short circuit of the accumulators, touching the current-carrying parts can result in severe burns.

Do not place accumulators in the vicinity of heat sources and do not allow them to come into contact with open flames. Risk of explosion!

Accumulators should never be opened or destroyed. The electrolyte released is very hazardous to your health and the environment. It could result in chemical burns of skin and eyes; additionally, the electrolyte is very toxic.

WARNING!

Defective accumulators must be disposed of in an environmentally friendly manner!

Never dispose of accumulators with regular household waste!

Local disposal regulations must be observed!

2.10 Maintenance, service and malfunctions

DANGER!

Attention—risk of electric shock.

Even after switching off the power supply via the power button or after disconnecting the accumulator feed, parts of the UPS could still be carrying high voltages.

ATTENTION!

The following precautions must be taken when working on the UPS and the accumulators:

- Before beginning work on the UPS, it must first be switched off and disconnected from the mains power supply and the loads;
- Remove wristwatches, jewelry, and other metallic objects;
- Only use isolated tools;
- Work on live equipment must only be performed by specially trained personnel. These persons must wear the appropriate personal protective equipment (PPE) at all times;
- The UPS may not be disassembled;
- Work on the accumulators must only be carried out and supervised by personnel with the required expertise concerning safety regulations;
- Unauthorized personnel are to be kept away from the UPS and the accumulators.

3. UPS device description

This UPS device is an ONLINE UPS according to the double conversion principle. Based on the outstanding performance in compliance with EN 62040-3, the UPS is classified as (VFI-SS-111). This allows for subsequently connected appliances to be optimally supplied, entirely irrespective of how the primary power source (mains power supply) behaves.

Malfunctions such as: mains power failure, power supply undervoltage, power supply overvoltage, temporary mains voltage changes (transients), subtle mains voltage deviations, frequency changes, etc., will not be transferred to the connected loads in standard and autonomous operating modes.

The UPS is used for the support of sensitive devices and systems, such as e.g.: computers, servers, emergency systems, electronic cash registers, instruments critical to operation, telecommunications systems, processor control systems, surveillance and management systems, etc.

The ADIRA series contains an internal battery bank as well as a secondary power source. A possible extension of the autonomous times occurs through the adaption of an external battery bank or its capacity. If very high autonomous times (capacities) are required, a reversion to the XL device variants must take place because these variants supply a considerably higher charging current.

3.1 Topology and operating modes

The following figure (Fig. 3-1), a block diagram of the UPS device, clearly shows the double conversion principle. The mains power supply is converted to the DC intermediate circuit whereby the energy storage unit (battery bank) will be charged. The loads, or appliances, on the UPS output are supplied by an additional conversion (INVERTER) without failures or interruptions.

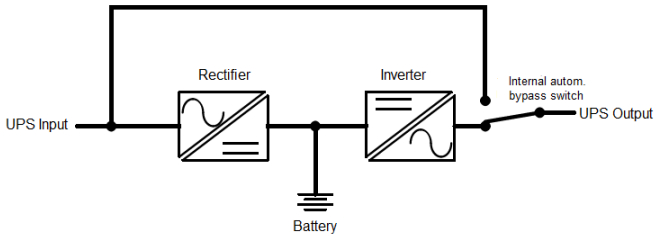


Fig. 3-1 Topology, function groups for the UPS device.

It is clear that, within the mains power supply, failures do not extend to the UPS output and, consequently, the loads. Furthermore, all operating modes of the UPS device can be derived from and represented by the block diagram presented above:

Standard operation mode (INVERTER MODE)

The standard operation mode is characterized here by a classic double conversion. The supply network is converted to the DC intermediate circuit which then feeds the UPS output through an inverter (DC/AC converter). The bypass is inactive here.

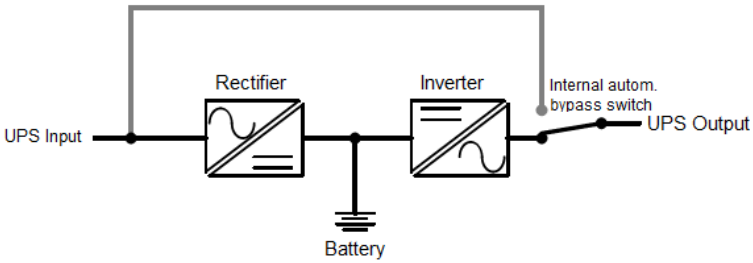


Fig. 3-2 Operating mode: Standard operation.

Support or autonomous mode (BATTERY MODE)

In the event the supply network temporarily fails, the inverter draws power directly from the battery bank and thereby supplies the UPS output without interruption. The battery mode is limited by the capacity of the battery bank and its charging status.

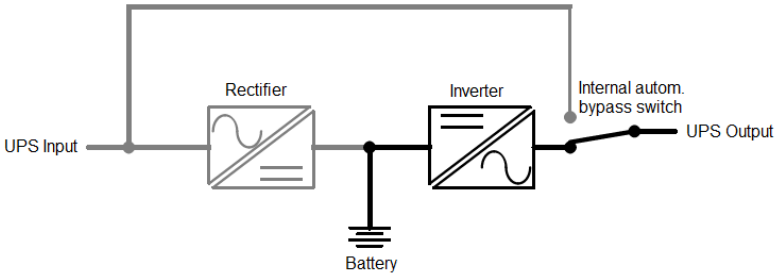


Fig. 3-3 Operating mode: battery mode.

Static bypass operating mode (FAULT MODE)

Often, in the case of a device fault (fault mode) within the inverter, the UPS automatically switches to the static bypass operating mode without interrupting the UPS output. In doing so, the load feed is securely maintained over the power supply, albeit without the support function of the UPS. Once the fault has been eliminated, the device returns to the standard operation mode. Malfunctions can also be caused by the loads when, for example, the UPS is overloaded.

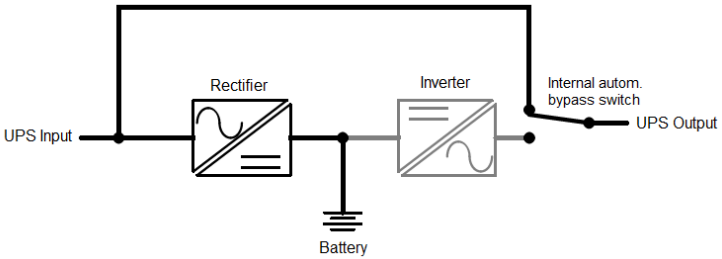


Fig. 3-4 Operating mode: static bypass.

WARNING!

Never leave the UPS in the static bypass mode, or the fault mode, for an extended period of time. The loads will continue to be supplied but without any support function from the UPS.

The static bypass mode can also be intentionally switched on, e.g., for screening.

Power-saving mode (ECO MODE)

The “power-saving mode,” called the ECO MODE, is a unique feature of the ADIRA series. The UPS device is intentionally operated in the static bypass mode for this purpose. In this case, the inverter remains inactive but operation ready whereby the UPS consumes considerably less power (LINE INTERACTIVE). The device automatically converts to autonomous mode only in the event of power failures/faults. However, the use of the ECO MODE is only sensible when the loads are “robust” devices which have low tolerance for switching and power supply fluctuations while in the bypass mode.

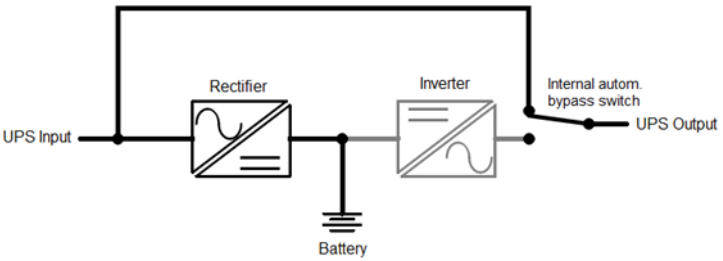


Fig. 3-5 Operating mode: ECO MODE (static bypass).

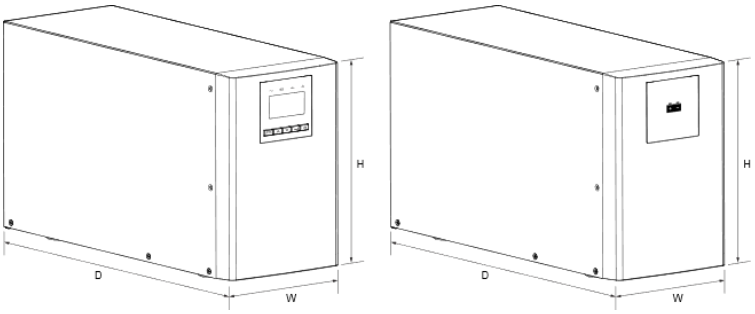
The operating mode (ECO MODE) is not recommended for sensitive loads because many malfunctions such as, e.g. transients, penetrate the bypass and could affect the loads. The same applies as long as the UPS is not being supplied by the public network but rather by a generator.

3.2 The device series, format and housing sizes

The ADIRA series 700VA-3000VA is produced in a wide range of performance capacities and models, each with a respective XL variant. See the following lists for more information.

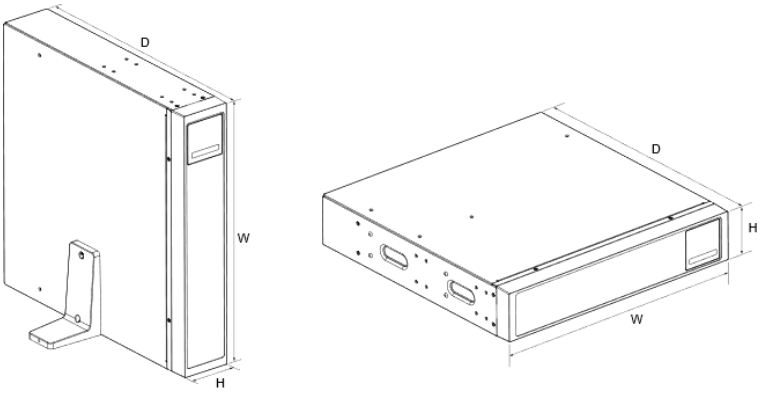
The weight data in these tables only serve as indications. Please note these data on the packaging.

Tower version:



Model	Net weight (kg)	Dimensions: H x W x D (mm)
ADIRA T 700	14	220 x 145 x 404
ADIRA T 700 XL	6.4	220 x 145 x 404
ADIRA T 1000	14	220 x 145 x 404
ADIRA T 1000 XL	6.4	220 x 145 x 404
ADIRA T 1500	14.3	220 x 145 x 404
ADIRA T 1500 XL	6.7	220 x 145 x 404
ADIRA T 2000	26.0	318 x 192 x 428
ADIRA T 2000 XL	11.0	318 x 192 x 428
ADIRA T 3000	26.4	318 x 192 x 428
ADIRA T 3000 XL	11.4	318 x 192 x 428
Tower 36V Battery pack	12/19	220 x 145 x 404
Tower 72V Battery pack	24/39	318 x 192 x 428

Rack/Tower version:



Model	Net weight (kg)	Dimensions: D x W x H (mm)
ADIRA RT 700	15.5	445*438*85.5
ADIRA RT 700 XL	8.0	445*438*85.5
ADIRA RT 1000	15.5	445*438*85.5
ADIRA RT 1000 XL	8.0	445*438*85.5
ADIRA RT 1500	15.8	445*438*85.5
ADIRA RT 1500 XL	8.2	445*438*85.5
ADIRA RT 2000	25.7	600*438*85.5
ADIRA RT 2000 XL	10.6	600*438*85.5
ADIRA RT 3000	26.2	600*438*85.5
ADIRA RT 3000 XL	11.0	600*438*85.5
RT 36V battery pack	15/23	445*438*85.5
RT 72V battery pack	25/40	600*438*85.5
ADIRA RTS 2000	9,5	505*438*85.5
ADIRA RTS 3000	9,8	505*438*85.5
RTS 72V Batteriepack	22,6	445*438*85.5

In principle, all devices can be operated with an external battery bank whereby the total capacity through the extension comes from the internal and external battery bank.

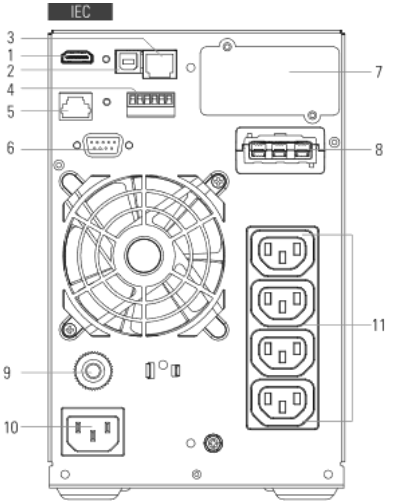
Devices of the XL design are equipped with more efficient charging units for charging external battery banks with high capacities within normal charging times, thereby shortening the recovery time.

3.3 The UPS and its components in detail

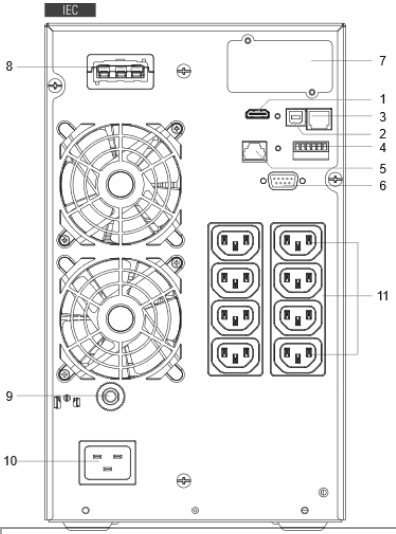
All the device elements for the operation are arranged on the front of the device, and the elements for connection or installation are on the rear side of the device.

Thus the respective rear sides of the ADIRA device series differ in individual models and are represented accordingly below with the numbered components:

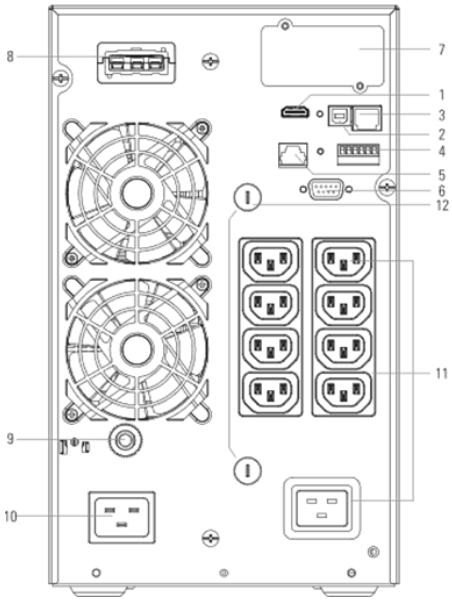
ADIRA T 700/700XL/1000/1000XL/1500/1500XL



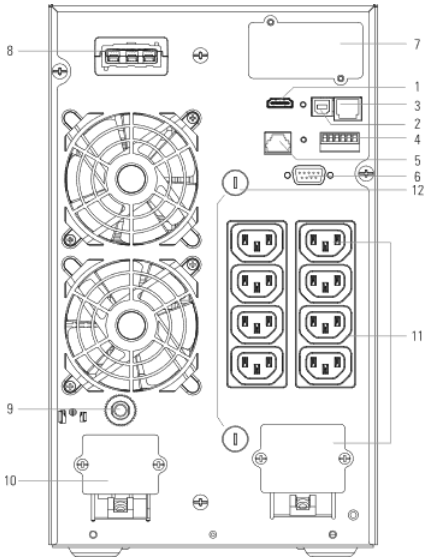
ADIRA T 2000/2000XL



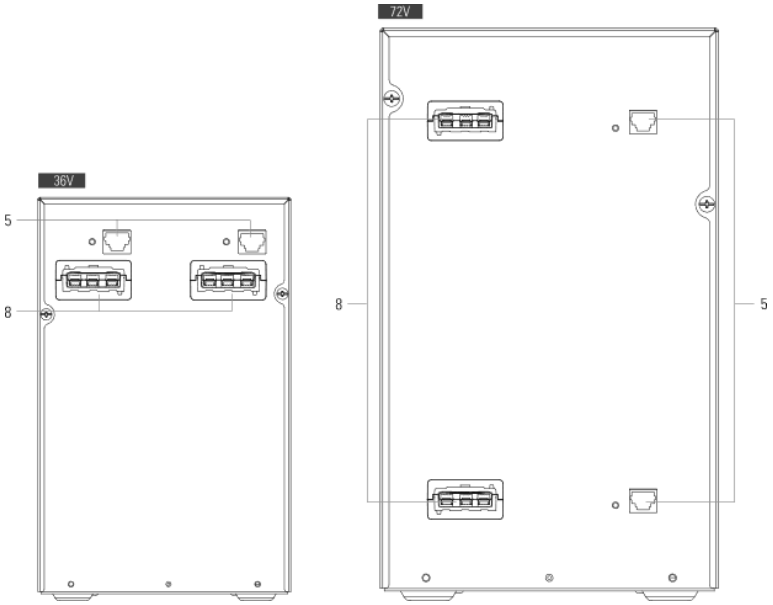
ADIRA T 3000



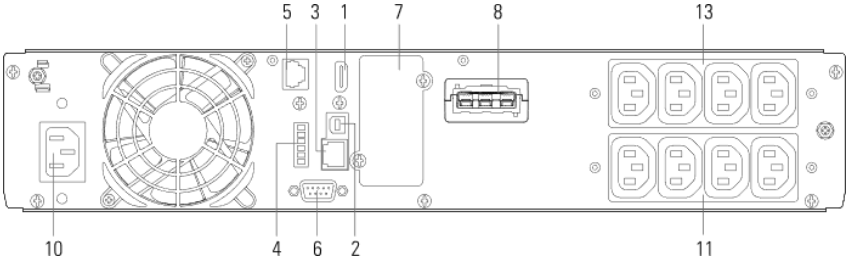
ADIRA T 3000XL



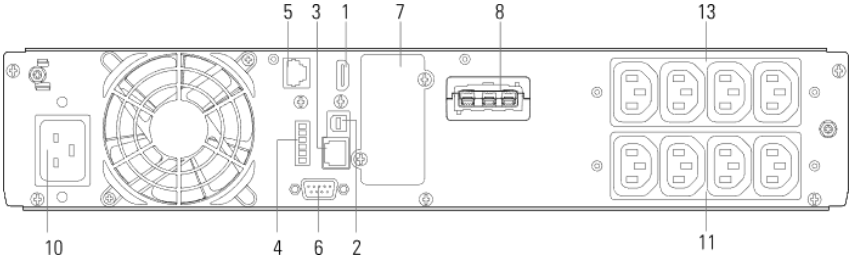
Battery pack for the tower series



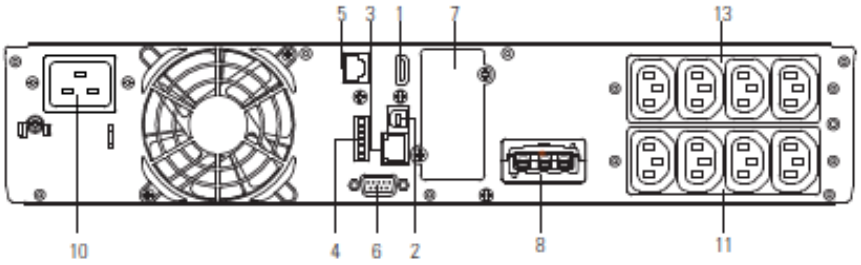
ADIRA RT 700/700XL/1000/1000XL/1500/1500XL



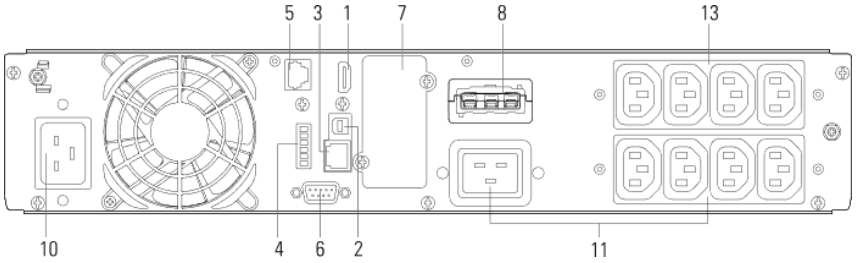
ADIRA RT 2000/2000XL



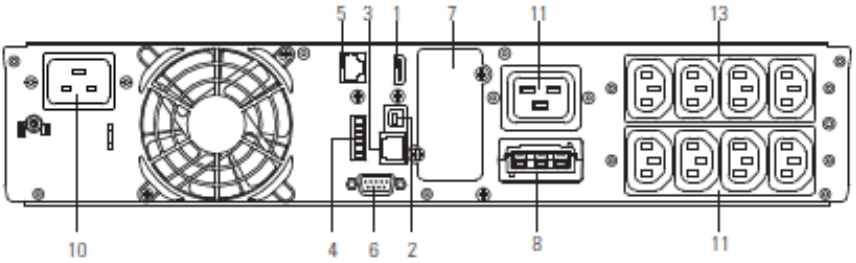
ADIRA RTS 2000



ADIRA RT 3000/3000XL



ADIRA RTS 3000

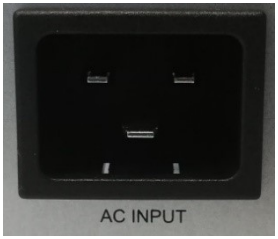


Battery pack for rack/tower 36VDC

Battery pack for rack/tower 72VDC

1	WLAN(HDMI) connection	2	USB connection	3	Ethernet (RJ45)
4	Remote power off (RPO)/ relay contact input/output	5	Autom. battery pack recognition	6	RS232 connection
7	Intelligent slot for SNMP adapter	8	Battery pack connection	9	Input fuse
10	Input plug socket or terminal	11	Output plug socket or terminal	12	Output fuse
13	Programmable outputs				

3.3.1 The connection area, rear side of the UPS

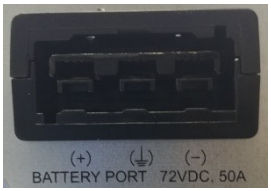


The image shows the UPS input (mains cold device plug). The connection is marked with: “AC INPUT” (10) and can vary in the different models. The ADIRA T 3000 XL variant includes a fixed connection.

The UPS output “AC OUTPUT” (11) is equipped with a cold device socket with multiple plugs. Depending on the model, there are 4-8 plugs. The current carrying capacity is labelled accordingly. The device variants ADIRA T and RT 3000 (XL) are also equipped with a 16A high-current output.

The interface area supplies the following communication or signal connections:

- USB port
- WLAN port
- Ethernet port
- RS232 port
- RPO, emergency shutdown signal (REMOTE POWER OFF); enables the load drop via the emergency shutdown button.
- 1x input relay point
- 1x output relay point
- BATT DETECTION, automatic recognition of connected battery banks



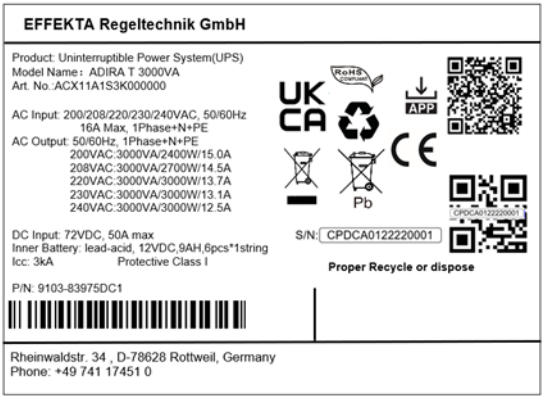
The UPS battery bank connection (8) serves the coupling of the UPS with a (suitable) external battery bank. The nominal battery bank voltage is indicated directly on the connection and must be observed!

The slot for additional expansion modules, INTELLIGENT SLOT (7), is usually fitted with an SNMP adapter.

3.3.2 Device label

The following information, among other things, is found on the UPS device label:

- The model name;
- The data for the connection values;
- The item number;
- CE label;
- Serial number (& barcode) of the device.



ATTENTION!

As a basic principle, compare the label on the device and the present operating manual for conformity with the device. This eliminates the improper use of the operating manual and the UPS.

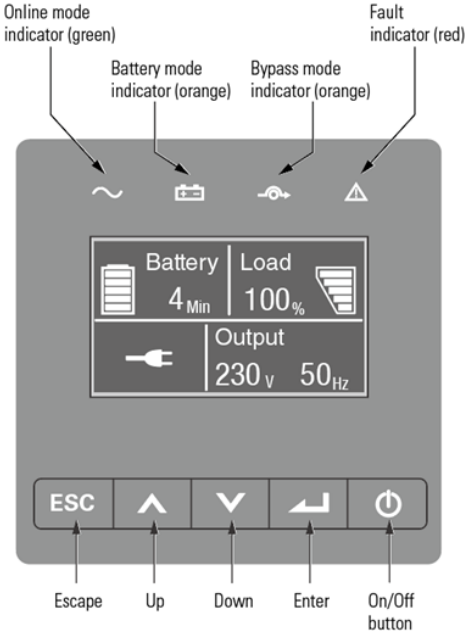
3.3.3 Control panel (display) of the UPS

All operation and display elements of the device are consolidated on the control panel (PANEL) and enable a clear representation of all status data or device information or the operation of the UPS (device).

All the important data can be represented, retrieved or set on the control panel of the UPS. The representation of all device information and parameters occurs on the LC DISPLAY. This includes operation parameters, status data or error codes. A complete table of all status messages on all UPS operating modes is summarized under ⇨ 9 Error diagnosis.

The LC DISPLAY also has backlighting which is automatically switched on for a period of time in the event a button is pressed or the operation changes. Additionally, the light blinks in the event of an error in the device.

The navigation and entry occur on the keypad shown below.



The following table shows the status and the display description:

Display	Status	Description
green	on	The UPS normally operates in an online or high efficiency mode.
orange	on	The UPS is in battery mode.
yellow	on	The UPS is in bypass mode.
red	on	The UPS has an active alarm or error. See the chapter on “Error messages” for further information.

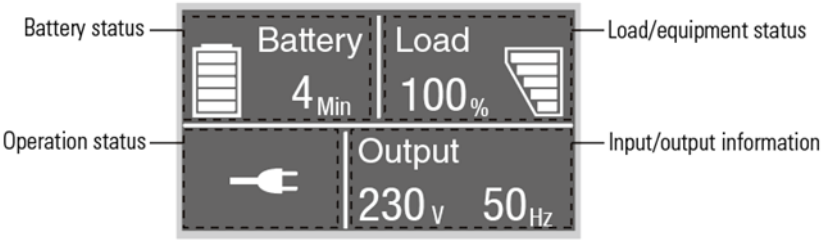
The following table shows the function and the description of the keypad:

Button	Function	Description
	Switch on without network	By pressing the button for >100ms & < 1s, the UPS can be switched on without a power supply when the battery is connected.
	Switch on	By pressing the button for >1s, the UPS can be switched on.
	Switch off	By pressing the button for >3s,the UPS can be switched off.
	Scroll up	Press to scroll up on the menu.
	Scroll down	Press to scroll down on the menu.
	Enter	Select/Confirm the selection.
ESC	Leave the current menu	Press to leave the current menu and to return to the main menu or the previous menu without changing the settings.
	Mute buzzer	Press the button to temporarily mute the buzzer. The buzzer will be activated again once a new warning or malfunction becomes active.

3.3.3.1 DISPLAY information of the control panel

The status and other information about the device can be read from the LC display or important parameters can be set via the control panel or the LC display.

Due to continuous updates of the software, it is possible that additional information exists that is not addressed here in detail.



Operation status	Mode	Description
	Standby mode	The UPS is in standby mode without output.
	Online mode	The UPS operates normally and supplies the connected loads.
1 beep every 4 seconds	Battery mode	A power failure occurs, and the UPS supplies the devices via batteries. Prepare the device to shut down.
1 beep every second	Battery mode under low battery voltage	The UPS will shut down soon.
	High efficiency mode	If the power fails or a malfunction occurs, the UPS immediately switches to the standard mode or battery mode and continuously supplies the load.
	Converter mode	The UPS will operate with a fixed output frequency (50Hz or 60Hz).

		The load should be reduced to 60% in the convertor mode.
	Bypass mode	An overload or an error has occurred. The UPS is in bypass mode.
	Battery test	The UPS conducts a battery test.
	Battery error	The UPS identifies defective batteries, or a battery connection has been disrupted.
	Overload	Some unnecessary loads should be switched off to reduce the overall load.
	Error mode	Several serious problems have occurred.

4. Storage and unpacking

4.1 Storage of the UPS

If the UPS and/or the separate battery bank are to be stored after delivery, the following points must be observed:

ATTENTION!

- Always leave the UPS and the accessories in the original packaging;
- The recommended storage temperature should be between 10–25°C. In any event, it is not allowed to exceed or fall below the maximum temperature limits (see here ⇨ 133 Technical data);
- The delivered goods must also be protected from moisture. The device must therefore be stored in a dry area;
- If the storage period exceeds 4 months, the battery bank (internal/external) must be charged via the UPS for a period of approximately 24 hours to avoid a deep discharge of the accumulators which would result in irreversible damage to the accumulators. The UPS must be connected to the mains power supply for this.

4.2 Transport to the installation site

As the point of delivery or storage of the UPS is usually not the installation site, the UPS must be transported there. The following must be considered in this case:

ATTENTION!

- Always transport the delivery in the original packaging as close as possible to the installation site;
- In addition, mind the center of gravity when transporting. Since an explicit transport position is not stipulated for the device, it is preferable to transport the device flat. This way, the possibility of the device tipping over is ruled out;

- There is always a general risk of tipping or tilting in the case of devices with a high center of gravity.

4.3 Unpacking and positioning the UPS

Remove the packaging at the installation site with the utmost care to avoid causing any possible damage to the UPS and the packaging material.

ATTENTION!

Check the scope of delivery.

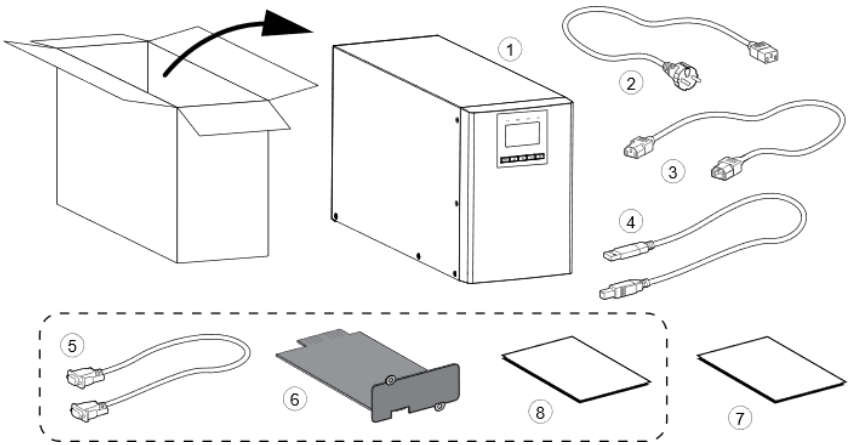
Check all packaging materials to ensure that no items are missing.

After unpacking, inspect the delivery for visible damage that may have occurred during transportation. Under no circumstances should you operate the device if you detect damages or if any parts are missing. Instead, notify the supplier and dealer immediately.

The packaging is recyclable. Please save these materials after unpacking for later use or dispose of them properly.

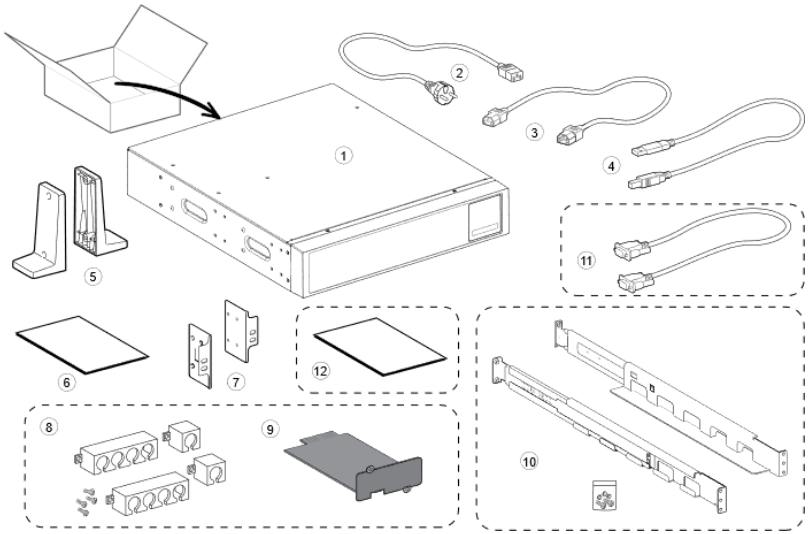
4.4 Scope of delivery

4.4.1 Tower model



1	UPS	2	Input cable (not included with the 3000VA ADIRA T XL model)		
3	Output cable	4	UPS cable		
5	RS232 cable	6	SNMP/relay card (optional)	7	Operating manual (English)
8	Operating manual (multilingual) (optional)				

4.4.2 Rack/Tower model



1	UPS	2	Input cable	3	Output cable
4	UPS cable	5	Feet for tower installation	6	Operating manual (English)
7	Rack mounts	8	Cable clamps (optional)	9	SNMP/relay card (optional)
10	19”-rails (optional)	11	RS232 cable		
12	Operating manual (multilingual) (optional)				

5. Installation and connection of the UPS

All limit values regarding the ambient and operation conditions listed in the technical data are to be maintained in order to ensure the proper functioning of the UPS device.

ATTENTION!

The system must only be installed and switched on by trained electricians in compliance with the corresponding safety regulations and standards and within the national guidelines!

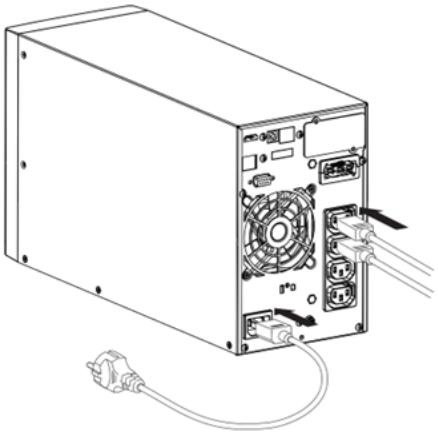
WARNING!

The UPS must be installed in a well-ventilated environment, far from liquids, inflammable gases, and corrosive agents.

In general, the following rules apply for the installation site or the mounting of the UPS inside a switch cabinet, etc.:

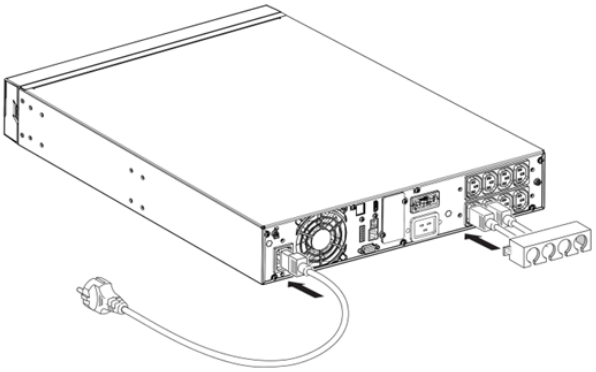
- Always mind that there is sufficient space behind the UPS in order to be able to perform the necessary connection work. Ensure that the base/guide rails have an appropriate carrying capacity for the weight of the UPS;
- Observe the prescribed mounting position (standing). The device can also be placed provided the air vents remain unobstructed;
- Make sure that the ventilation of the area and the air flow of the device are guaranteed on the installation site or in the mounting area. Because this UPS will be aired lengthwise, the air flow on the rear side of the device (exhaust air) should not be obstructed;
- Mind the positioning of the device. Due to the heat build-up in the UPS, it is advantageous to keep some space between the UPS and the battery bank. The battery bank can also be installed below the UPS. When installing in superior systems (e.g. machines, facilities), it must be noted that the UPS and battery bank must be operated in the specified temperature range. In the event of heat accumulation in the installation room, this must be resolved with sufficient external ventilation;
- The UPS must only be installed in a clean, dust-free, and dry area;
- Avoid extreme temperature and moisture. A maximum service life, especially with regard to the battery bank, will be achieved at an ambient temperature of 15–25°C.

Check that the details on the label on the upper cover of the UPS conform with the AC power source and the actual power consumption of the entire load.



1. Connect the UPS input socket with the cable to the mains power supply.

2. Connect the loads with the cables to the UPS.



ATTENTION!

Note: The UPS charges the battery once it is it connected to the power source even if the on/off button is not pressed.

When the UPS is connected to the AC power source, 8 hours of charging time is necessary before the battery can supply the specified interim period.

5.1 External bypass

An external manual bypass is one of the bypass switches independent of the UPS device that builds a bridge between the mains power supply and the loads. At the same time, the UPS is, as a result, connected voltage-free on both the input and output sides, and, consequently, the device is disconnected from the installation.

Therefore, it is imperative to aim to equip a UPS system with an external bypass as, by these means, the entire device can also be exchanged in the case of emergency without interrupting the load feed.

Please find the connection details in the respective operating manual (external bypass).

Further information can also be found here in Chapter ⇨ 155 Optional accessories EFFEKTA Regeltechnik GmbH.

5.2 Connection preparations

Before the device can be connected, the following conditions for the surroundings must be ensured:

ATTENTION!

As a general rule, the UPS device is connected to a suitable power supply network in compliance with EN 62040. This usually includes the TN-S network. The neutral conductor and the protective earth must not be interrupted here during the overall installation (up until the loads).

The circuit breaker on the power supply side must also be made available as an isolator for maintenance and service personnel.

In general, we discourage the use of a fault current circuit breaker on the power supply side connected to the UPS units. Instead, the fault current should always be installed at the UPS output or, more preferably, directly in front of the load.

5.2.1 Final inspections and safety measures

WARNING!

Before beginning with the connection work, please pay attention to the safety instructions (⇨ 2 Connection) for connecting all components included the

power supply. In general, check that all connections have no present voltage before beginning further work.

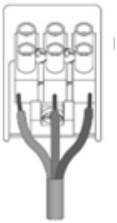
Live-line work is necessary for establishing the external battery bank connection. Please note all relevant safety instructions here.

Ensure once more that the temperature balance between the UPS/battery bank and the surroundings has been thoroughly carried out to eliminate any effects of condensation (⇨ 2 Positioning).

In addition, ensure once more that the installation and wiring comply with the local electrical safety regulations.

5.3 Connecting the UPS device

The ADIRA series is equipped with cold device connections in accordance with IEC 60320. In this way, the UPS can be connected to the common wall socket (mains power supply) with the power cable provided. The ADIRA T 3000 XL variant only requires a fixed connection on the input and output sides.



ATTENTION!

If the UPS has been connected to the mains power supply, this switches to the bypass mode. The display appears, and the charging mode is active.

WARNING!

It should be generally guaranteed that the wall socket is properly secured and the PE protection connection is present.

Furthermore, the load(s) can usually be connected to the UPS with an appropriate cold device cable.

WARNING!

Attention must also be paid here that the PE protection connection and the corresponding fuse for the loads are present.

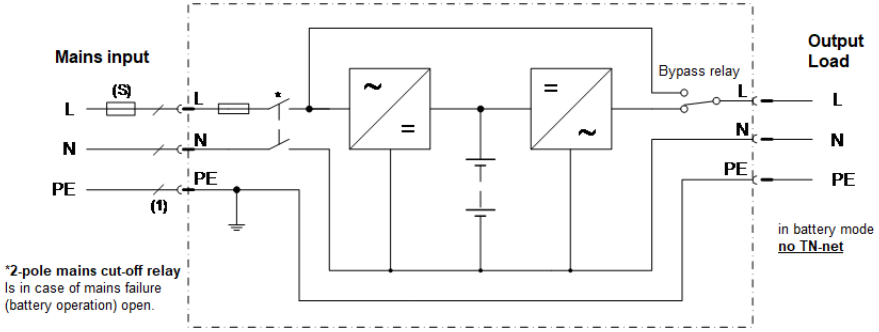
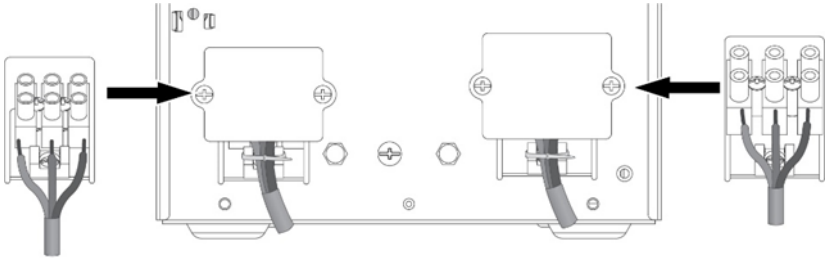


Fig. 5-1 Block diagram of the UPS series ADIRA

Input and output connection for ADIRA T 3000 XL



The following table generally shows the possible connection variants and the necessary fuse.

Device:	Input connection:	Conductor cross-section (1):	Circuit breaker (S):	Output connection:
ADIRA T 700 - 1500 (+XL)	IEC C14	1.0 mm²	10 A	4x IEC C13
ADIRA T 2000 (+XL), ADIRA T 3000	IEC C20	1.5 mm²	16 A	8x IEC C13
ADIRA T 3000XL	Fixed connection	2.5 mm²	20 A	Fixed connection
ADIRA RT 700 - 1500 (+XL)	IEC C14	1.0 mm²	10 A	8x IEC C13
ADIRA RT 2000 (+XL)	IEC C20	1.5 mm²	16 A	8x IEC C13
ADIRA RT 3000 (+XL)	IEC C20	1.5 mm²	16 A	8x IEC C13 1x IEC C19

WARNING!

It is imperative to connect the protective conductor here and to maintain he loop resistance all the way to the last load.
It is likewise possible to secure the loads separately against overcurrents and fault currents and to ground them directly.
Always pay attention to the correct polarity (L, N) between input and output for the UPS.
If the UPS is in the midst of an emergency stop circuit, it must be observed that the UPS output is not completely currentless after the activation of the emergency stop current. The loads will continue to be supplied for the duration of the UPS autonomous time.

WARNING!

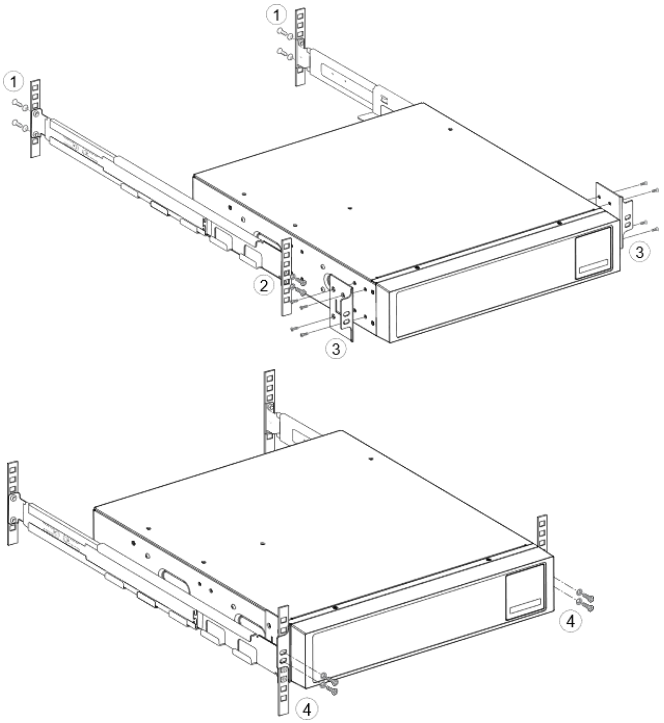
The UPS device contains components carrying high voltage and current. Improper handling could therefore lead to electrical accidents with potentially fatal outcomes or property damage.

For the ADIRA 3000 XL device, the output cable should be less than 3m long. If the cable is connected to the terminal strip, the internal copper wire must not be exposed so as to avoid the risk of electric shock.

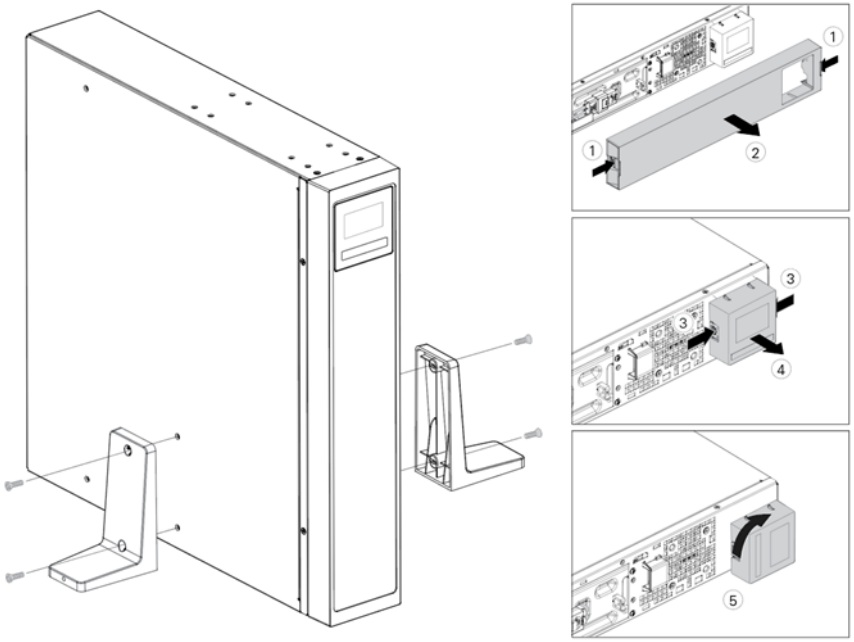
5.3.1 Installation of the ADIRA RT model

5.3.1.1 Rack installation

Carry out Steps 1 through 4 for installation on the 19”-rails.



5.3.1.2 Tower installation



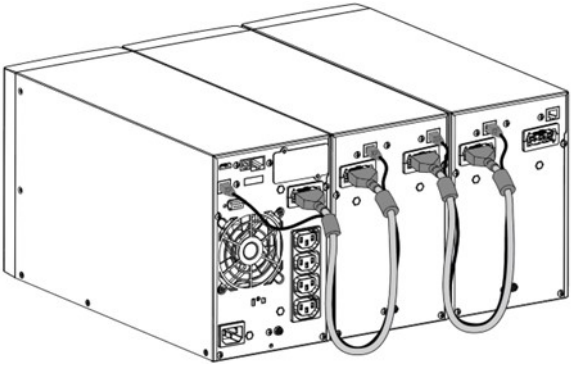
5.3.2 Connecting the external battery pack (battery bank)

Always connect the battery bank with the connection cable provided for this purpose. Furthermore, please observe the following figures:

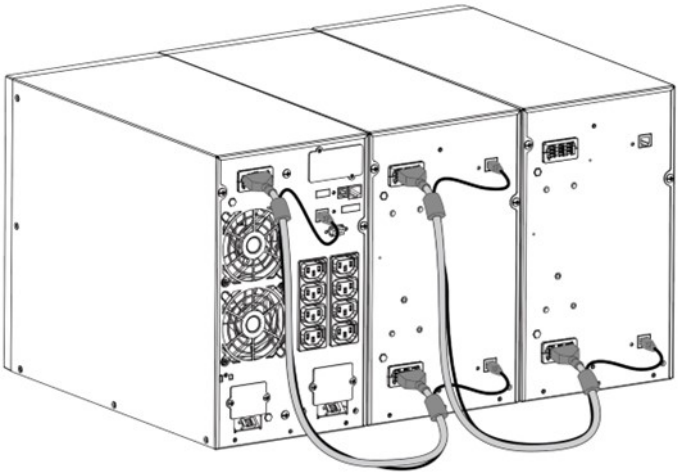
- The battery connection cables are provided with the respective battery bank.

5.3.2.1 Connecting the external battery pack for the ADIRA T model

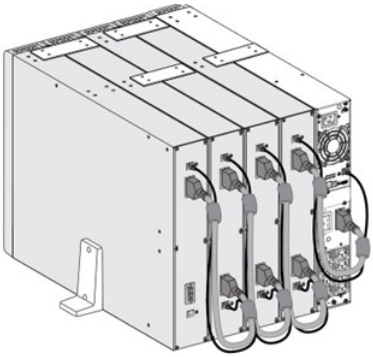
700VA/1000VA/1500VA

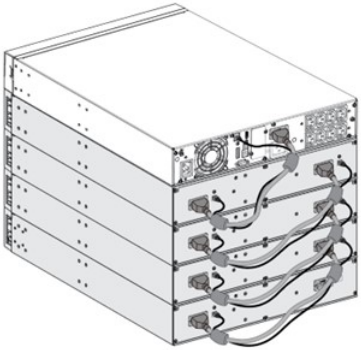


2000VA/3000VA



5.3.2.2 Connecting the external battery pack for the ADIRA RT model





WARNING!

The connection of the battery pack occurs under voltage. All safety measures must be observed here. Ensure in advance that the connection values of both devices correspond.

When connecting a battery bank to the UPS, a slight arc can occur. This is normal and does not present any danger for personnel.

Up to 4 battery banks can be connected to the UPS.

ATTENTION!

If the UPS has been coupled with the battery bank in accordance with the instructions above, a reaction of the UPS should not occur. Neither a display appears in the control panel nor is the UPS active.

- The number of battery packs is automatically recognized by the “BATT DETECTION” connection (RJ45).

The number of external battery modules (EBM) is shown in the menu under “Measurement data” / ”Battery” and can be checked this way.

In the “Settings” / ”External Battery” menu, the automatic battery recognition can be set to manual entry. With this option, either the number of battery packs or the battery capacity can be manually adjusted.

6. Communication

6.1 Connection to the USB and RS232 communication ports (serial)

For the setup of a direct communication with the UPS, two standard ports are made available. However, these cannot be used at the same time:

USB port:
Connect the USB port to your PC by means of a USB cable.

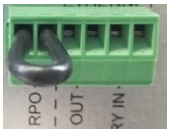
Serial RS232 port:
Connect the serial port with your PC by means of a serial cable (1:1). The port operates according to the Megatec protocol. The layout (on the UPS side) is as follows:

Pin Sub-D:	Description:	Function:
2	TxD	Send (Outlet)
3	RxD	Receive (Input)
5	GND	GND

6.2 Remote operation functions

- **RPO connection (EMERGENCY POWER OFF), load drop**

The RPO connection can be used as an external emergency stop function.

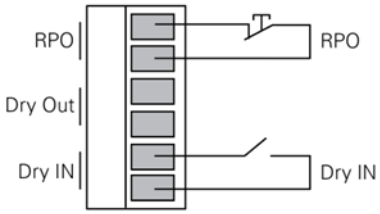


RPO, Emergency off contact:
Use the 2-pin plug provided for this and connect it to a closed contact (e.g. emergency off button). If the button is activated, the UPS output is switched off (dropped).
If an emergency off button or similar is not used, you must bridge the contact directly to the plug.

RPO	Connection data
Connection type	max. 1 mm² cable
Specification of the external switch	60 V DC/30 V AC 20 mA max.

- **Relay contact (input)**

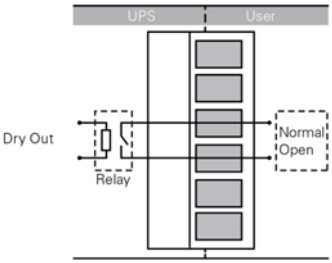
The input contact can be configured as follows.



RPO	Connection data
Connection type	max. 1 mm² cable
Specification of the external switch	60 V DC/30 V AC 20 mA max.

- **Relay contact (output)**

The output contact can be configured in the menu under “Settings.”



RPO	Connection data
Connection type	max. 1 mm² cable
Internal relay specification	24 V DC / 1A

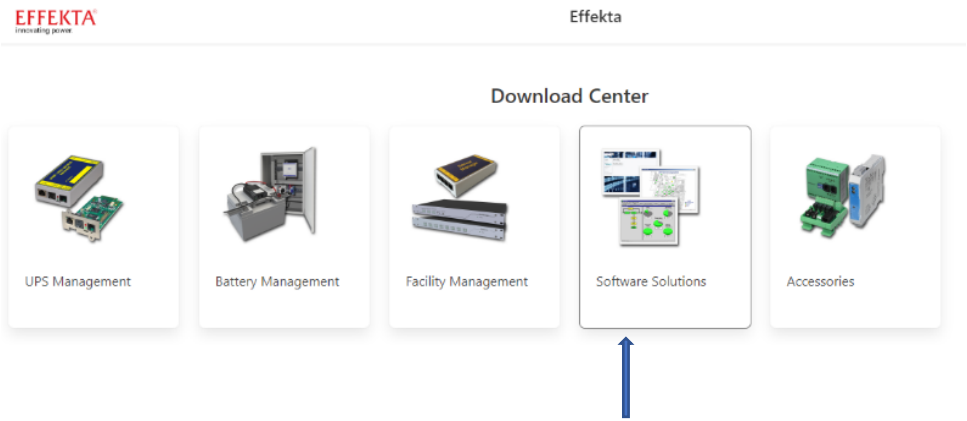
6.3 UPS management software

The UPS management software UPSMAN monitors uninterruptible power supply units (UPS) and other devices with serial, USB, or network ports and receives status information and measurement data through these.

This UPS management software can be downloaded for all EFFEKTA® AC-UPS for free under the following link.

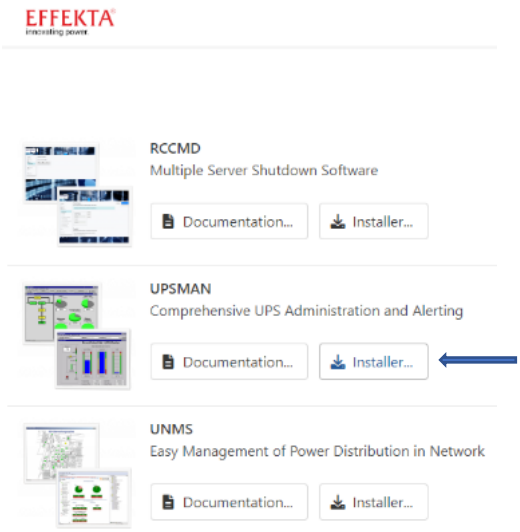
https://www.generex.de/partners/oem/32

The following display then appears:

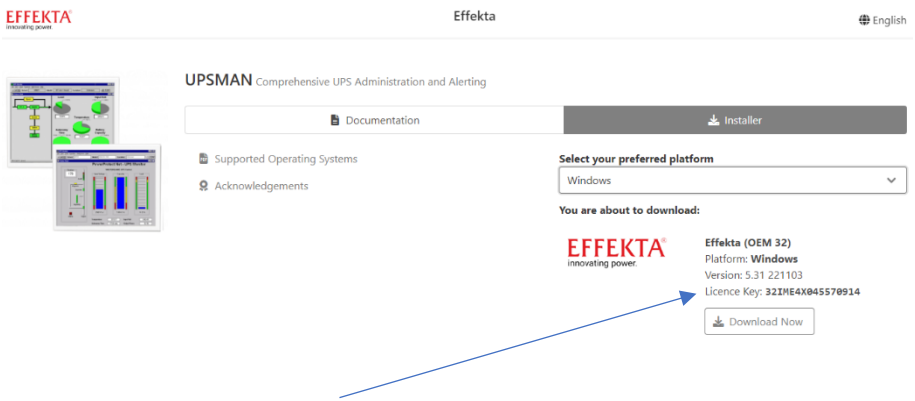


You must select “**Software solutions**” here.

In the following window, please select **“UPSMAN installer”**:

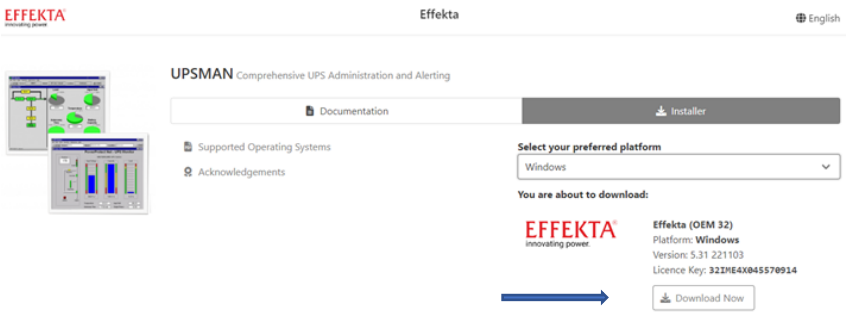


In the new window, you can then select your operating system (e.g. Windows).

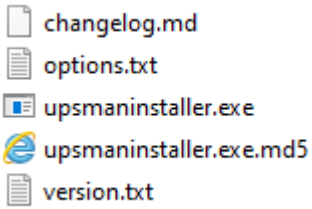


Please note the license key required for the installation.

By confirming this with “Download now,” the zip file (ca. 107MB) will be saved on your computer.



After extracting the zip file, you will have the following files:



With the application “upsmaninstaller,” the installation is started and the UPS management software UPSMAN is installed. Enter the noted license key here.

7. Device operation and service

Due to the comprehensive protective functions which the device performs regarding the loads, the UPS runs nearly automatically. This reduces the operation of the device to a few steps and also within the boundary of the power. As a result, the operation of the UPS is divided into “general operation” and “maintenance or service operation.”

ATTENTION!

In general, the operating personnel should inform affected employees (keyword: load network) about any scheduled tasks concerning the UPS system.
Make it a usual practice to have the error diagnosis listed in Chapter 8 ready in order to facilitate the immediate interpretation of the operation display and possibly occurring errors.

7.1 Operation and performance of the UPS

As a rule, the switching on or starting up and shutting down of the system is performed by the operating personnel.

WARNING!

The operator of the UPS device must always adhere to the instructions in this operating manual. Only the operator can perform the following actions and must always exercise particular care:

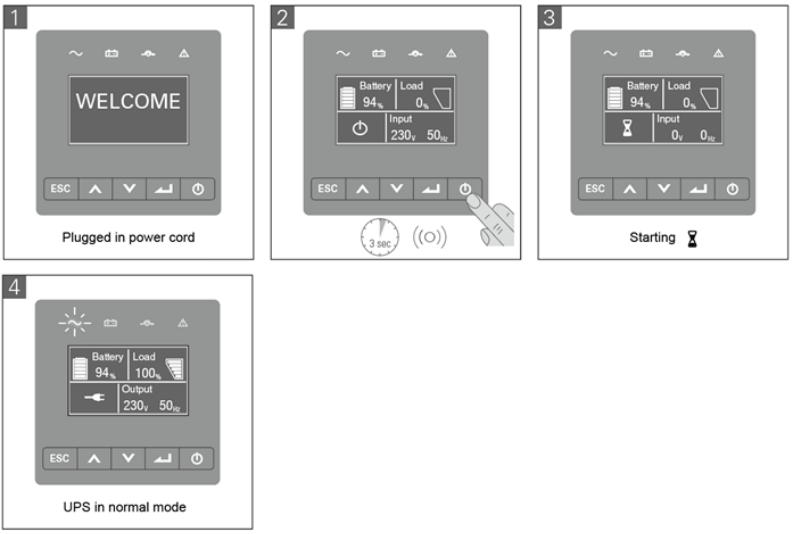
- Switching the UPS on and off;
- Reading the display messages and interpreting the acoustic warning signals;
- Switching from standard operating mode to autonomous mode and vice versa.

ATTENTION!

The operation of the UPS or system generally assumes that all previous chapters in this operating manual have already been successfully handled and monitored.

7.2 Starting the UPS device with the mains power supply

The following procedure is used for switching on the STANDBY mode and starting the UPS device. Maintain the sequence specified here:



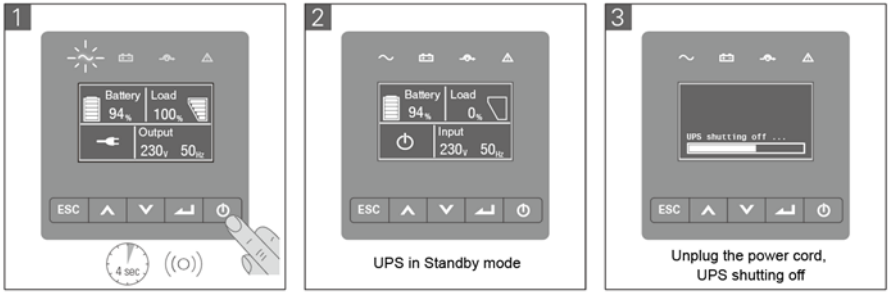
The switching on procedure is now completed. The UPS or system can remain in this state. The loads must possibly still be switched on.

ATTENTION!

The start process or switching to a different operating mode can take a few seconds under circumstances as internal synchronization processes are occurring.

7.3 Switching off the UPS

The following procedure is used to switch off the UPS. Maintain the sequence specified here:

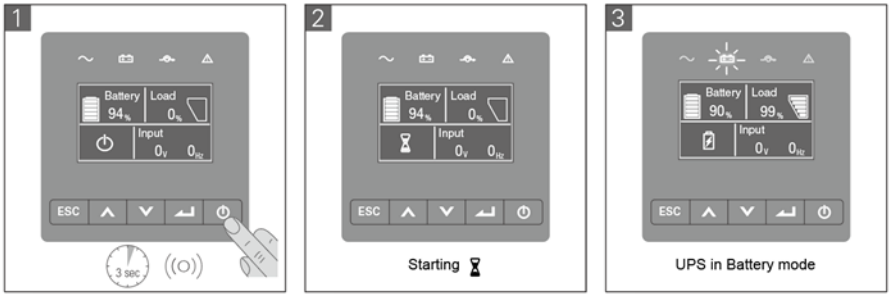


The shutdown procedure is now completed. The UPS device can remain in this state.

7.4 Starting directly in the autonomous mode (cold start)

The UPS device can also be started directly in the autonomous mode when a mains power supply is not available. Follow the instructions below for this:

✓ To begin, the device is completely switched off. There is no mains power supply!



The UPS outlet is switched on or the loads are supplied and supported. The battery bank is now discharged.

During the autonomous mode, the buzzer sounds with a beep signal (interval: beep/4 seconds).

ATTENTION!

A COLD START, also called BLACK START, is often used to perform several load or stress tests on connected loads in advance. Always observe the load indicator (LOAD) in the display here.

Do not leave the device or system in this state. Either switch the device off or ensure that the mains power supply is present and the device switches to standard mode.

7.5 Settings for the UPS device

General information and data about the UPS can be called up on the UPS control panel. Furthermore, all settings related to the UPS can be carried out. This includes, above all:

- Settings for the configuration of the UPS;
- Switching the bypass mode on and off;
- …

The following is an overview of the main items of the menu.

Main menu	Submenu	Display information or menu functions
UPS status		UPS mode, IoT status, date/time, battery status and current alarms
Event log		Displays the saved events and errors
Measure values		[Load] in W / VA / A / P%, [Input/output] in V / Hz, [Battery] in % / min / V EBM, [DC intermediate circuit] V, [temperature] in °C
Management	Activate bypass	Switch the UPS to the bypass mode
	Load segments (only in ADIRA RT)	Load segment on/off
	Start battery test	Start a manual battery test
	Reset error status	Actively clear fault
	Clear the event list	Delete the events and errors
	Reset the com card	Reset IoT and modbus TCP function in the UPS
	Factory settings	Reset to the factory settings
Settings		See Chapter 6.2.1 User settings
Identification		[Product name], [Serial number], [Firmware version], [IP/MAC address]

7.5.1 User settings

Submenu	Available settings	Standard settings
Language	English, Italiano, Français, Deutsch, Español, Русский, Polski, 简体中文	English
User password	[activated, ****], [deactivated]	activated
Password	Can be changed by the user	4732
Acoustic alarm	[activated], [not active]	activated
Output voltage	[200V], [208V], [220V], [230V], [240V]	[230V]
Output frequency	[autom. recognition], [convertor 50Hz, 60Hz]	Automatic recognition
High efficiency mode/ECO mode	[not active], [activated]	not active
Auto bypass	[not active], [activated]	not active
Start/Restart	[not active], [activated]	Cold start/autom. restart: activated Start in bypass: not active
Wiring error	[activated], [not active]	not active
Overload pre-alarm	[50%~105%]	105%
External battery	[Automatic identification], [Manual EBM: 0~4], [Manual Ah: 7~144Ah]	Automatic identification 0 EBM
Charging current	[2A], [4A], [6A], [8A] for XL variant	4A
Input signal	[not active], [remote on], [remote off], [forced into bypass]	not active
Potential-free signal (output signal)	[Load supplied], [by battery], [weak battery], [open battery], [bypass], [UPS ok]	bypass
Ambient temp. alarm	[activated], [not active]	activated
Duration of battery test	[activated], [not active]	activated
Date/time	dd/mm/yyyy, hh:mm	01/01/2020 00:00
LCD contrast	[-5 ~ +5]	[0]
Modbus TCP	[activated], [not active]	not active
IoT	[activated], [not active]	not active

8. Initial operation of the UPS

WARNING!

The initial operation generally requires that all previous chapters of this operating manual have already been read or processed thoroughly and successfully.
Also check that the connected loads have been switched off. The initial operation of the UPS devices is exclusively reserved for accredited personnel.

Please conduct the initial operation in the following order:

- ✓ Starting point: if an external battery bank is used, this should already be connected.
- Switch on the circuit breaker or the mains power supply.

The UPS proceeds to the STANDBY mode and switches to the charging mode.

ATTENTION!

In any case, it is possible to operate the device in the charging mode for a few hours in order to achieve the complete charging status of the battery bank before the UPS is started and assumes its support function.

- Now start the device by pressing the on button. The UPS proceeds to the standard operating mode (supply mode) and the UPS output is now active;
- Check all the status information and parameters on the display;
- Switch the loads on one at a time while observing the power values displayed;
- Briefly test the autonomous mode as well while observing the power values and status information;
- The UPS can now be left in the standard operating mode (supply mode); the loads are fully secured by the UPS;
- Follow the order in reverse to shut down the UPS.

WARNING!

In the event that errors occur during the initial operation, these must first be analyzed and eliminated before the initial operation can be continued.

9. Error diagnosis

Typical alarms and malfunctions:

So check the UPS status and the event log:

- Press any button on the front panel of the display to activate the menu options.
- Select the “event log” function from the menu.
- Scroll through the events and malfunctions listed.

The following table describes typical notifications.

Descriptions	Possible causes	Actions
Battery mode LED is on. 1 beep every 4 seconds.	A power failure has occurred, and the UPS is in battery mode.	The UPS supplies the loads with battery power. Prepare the loads to shut down.
Weak battery LED is on. 1 beep every second.	The UPS is in battery mode, and the battery empties quickly.	This warning addresses approximate data. The actual time until it shuts down can differ considerably.
No battery LED is on. Continuous beep.	The batteries are not connected.	1. Check whether all batteries and the cable for automatic battery recognition (RJ45) are properly connected. 2. Check the LCD menu under: Settings – External battery. If you select "Manual EBM settings" and the value is “0,” please enter the correct value.
Battery error LED is on. Continuous beep.	The battery test has failed due to poor or not connected batteries, or the minimum voltage of the battery is achieved in the OBM cycle mode.	Check if all batteries are properly connected. Start a new battery test: If the problem is still present, contact your customer service agent.

Descriptions	Possible causes	Actions
The UPS is not attaining the expected stored energy time.	The batteries must be charged or maintained.	Connect it to the mains power for 48 hours to charge the battery. If the problem is still present, contact your customer service agent.
Bypass mode LED is on.	An overload or an error has occurred, or the automatic bypass function is activated.	The device is supplied with power but is not protected from the UPS. Check if one of the following alarms has been activated: overtemperature, overload, UPS failure or automatic bypass setting.
Overload LED is on. 1 beep every second.	The load exceeds the UPS capacity (more than 105 % of the nominal capacity).	Remove a portion of the devices connected to the UPS from the UPS. The alarm is reset when the status is inactive.
Overtemperature warning Overtemperature LED is on. 1 beep every second.	The internal temperature of the UPS is too high. The UPS activates the alarm with the warning level but remains in the current operating mode.	Free the ventilation openings and remove all heat sources. Ensure that the air flow to the UPS is not obstructed.
The UPS does not start.	The input source is not properly connected.	Check the input connection to the UPS.
	The switch for the remote power off (RPO) is activated or the RPO connection is missing.	If the “remote power off” indicator in the UPS status menu is displayed, deactivate the RPO input.
Emergency power off	RPO is active.	1. Check the status of the RPO connection. 2. Reset the RPO error on the LCD display. Reset the main menu – management – error status.
Ventilation error	Ventilation is abnormal.	Check if the fan is operating normally.

Descriptions	Possible causes	Actions
Polarity error	The line conductor and neutral conductor at the input of the UPS device are switched.	Polarity recognition is deactivated by default. However, it can be activated/deactivated in the “Settings” menu. Connect the input cable again.
Overtemperature error	The overtemperature is too high. The UPS switches to bypass or switches off.	Check the ventilation of the UPS and the ambient temperature.
Short circuit on the output	A short circuit occurs on the output.	Check the output on the UPS and the loads and ensure that the short circuit has been eliminated before switching on the device again.
APP cannot connect to the UPS.	IoT is not activated.	Activate the IoT function via LCD
	Your IT settings are possibly blocking the connection from the UPS with the Cloud (NTP, Proxy, etc.)	Further information is available in the help file of the Winpower View App.
	The time and date in the IoT setting portal are not correct.	Activate the IoT function via the LCD. The IP address of the UPS is entered in the PC browser. Default username/password: admin/Admin*1

ATTENTION!

Never attempt to start the UPS when there is an error status. First eliminate the error source and then switch the device on again.

10. Troubleshooting

Over the course of time, failures or malfunctions of the UPS, the battery bank, or their surroundings can arise. In this event, please contact our Customer Service (service hotline) as soon as possible.
When contacting the service center, please provide the following information to ensure swift resolution:

- Model number, serial number and configuration of the device;
- Progress of the issue and date on which it first occurred;
- LCD/LED display information on the control panel (status or warning or alarm messages);
- Condition of the power supply system, load condition, ambient conditions of temperature and moisture, ventilation conditions;
- Information on the condition, such as the age of the battery bank.

Most importantly, name the respective qualified contact persons for the clarification of the issue and its resolution.

11. Service hotline

Should you encounter any general problems or require any information regarding safety, please contact our service hotline:

Telephone: 0049 / (0) 741 – 17451-52

You can also reach us via email at:

kundendienst@effekta.com

In addition, you can contact the relevant department or branch office directly as listed on our website:

http://www.effekta.com

12. Maintenance and service

You can expect a long service life and interference-free operation from this product. The service life and reliability of the UPS is greatly dependent on the conditions of its environment. The ambient temperature and humidity in the vicinity of the device must remain within the specified range. In addition, the area around the UPS should preferably be kept clean and free of dust.

At an ideal ambient temperature of approximately 20-25°C, the service life of the accumulators is typically about 4 years. The service life can be considerably increased with the use of special accumulators (up to ca. 8 years).

It should be regularly checked (6-12 months) if the remaining autonomous time (support time) is sufficient for the intended purposes. Should this no longer be the case, the battery banks will have to be replaced.

12.1 Measuring the support time (autonomous time)

WARNING!

Before beginning with this procedure, it is obligatory that all open databases must be secured. Furthermore, inform all involved employees of your intentions.

There are essentially two methods to measure the support time.
Method a) is suitable for measuring the actual back-up duration whereby the loads are required to be currentless at the end of the autonomous time.
Method b) allows for the determination of the remaining capacity after a defined support period. Here the loads are usually not currentless. In order to use one of the cited methods, force the UPS into the autonomous mode by switching off the mains power supply for the UPS (disconnect the plug). Switch the mains power supply on again after the measuring procedure (connect the plug) and/or switch the UPS on as usual.

Please remember that after measuring the autonomous time, the accumulators of the device may be discharged. This means that the UPS must operate in the standard operating mode for several hours (min. 6 h) to recharge the battery bank accordingly before this is approximately 80% operational (capable of supporting loads) again.

ATTENTION!

If the support time is not measured based on the local conditions or regulations, we recommend a prophylactic replacement of the accumulators every two years to avoid any risk of an insufficient autonomous period (support time) caused by degenerated accumulators.

In addition, the fans and ventilation ducts of the device should be inspected and, if necessary, cleaned regularly. This ensures, among other things, the full outlet power. The frequency of the cleanings and inspections depends very much on the environment of the system (keyword: dust).

12.2 Replacing battery modules or battery banks (HOT SWAP)

DANGER!

The replacement of the battery modules in a battery bank or even an individual accumulator must only be performed by authorized personnel. Always observe the safety guidelines for live-line working.

In general, the devices of the ADIRA RT series are capable of a HOT SWAP. This means that the battery modules and the additional battery banks can be replaced in the operating UPS. The advantage here is that the connected loads must not be switched off during the replacement procedure.

WARNING!

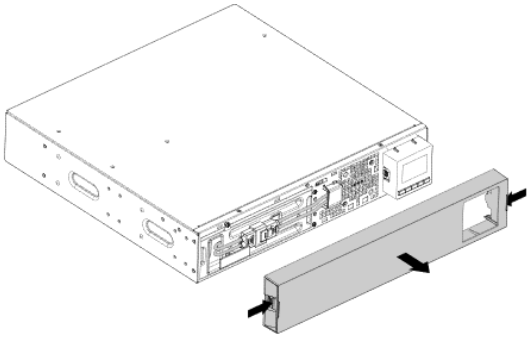
When replacing a battery module, the loads are directly connected to the mains power supply whereby the UPS cannot perform a supporting function at this time. Power failures and other mains faults are transferred to the loads nearly unobstructed.

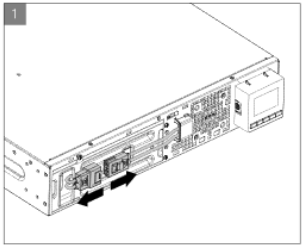
12.2.1 Replacement of the battery module in ongoing operation, ADIRA RT series

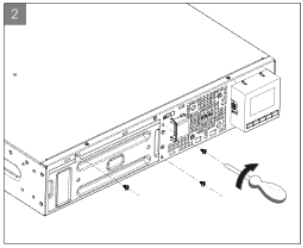
ATTENTION!

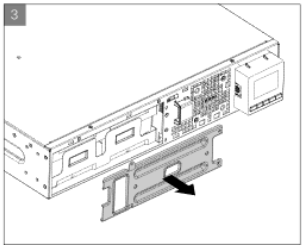
Please work strictly according to the following instructions to avoid damages to the equipment.
Inform the user of the connected loads of the planned service activities. Ensure the data of the connected loads before beginning with the service work.

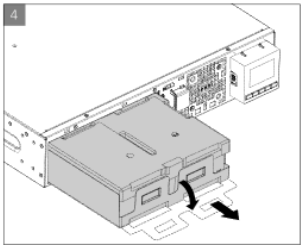
Please perform the work for the battery module replacement in the following order 1-4. To replace the battery module, only access to the front panel of the UPS is required:











Return the battery module to us in the same packaging in which you received the new module or take it to an appropriate recycling center.

The assembly essentially follows the reverse order.

- Insert the new battery set in the UPS.
- Fasten the metal protection covers and the front panel in place again.
- Test the new batteries.

Confirm that the replacement batteries have the same nominal value and the same label as the batteries to be replaced.

12.2.2 Replacement of an addition battery bank

In general, the steps to replace an additional battery bank are identical with the steps to replace a battery module (see 12.2.1).

CAUTION!

After opening, there is still voltage on both sides of the plug connection (UPS<-> battery bank).

An alarm on the control panel does not sound when the battery bank has been disconnected because the battery module is still connected.

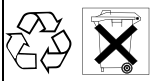
Replace the old battery bank with the new one. Proceed with caution. The battery bank is very heavy, and, for this reason, it can easily slip out of your hands.

Return the battery bank to us in the same packaging in which you received the new battery bank or take it to an appropriate recycling center.

The assembly essentially follows the reverse order here as well.

12.3 Maintenance and service contracts

EFFEKTA Regeltechnik GmbH offers corresponding maintenance and service contracts to guarantee the best possible reliability and availability of the UPS. Under a maintenance contract, our service personnel can also support and assist you in the following areas:

	Regular inspection of the UPS, in particular, the accumulators and their timely replacement.
	Inspection of the UPS installation and functionality.
	Measurements of the remaining autonomous time.
	Professional cleaning, of particular importance for the ventilation areas.
	Proper disposal of defective or degenerate components.
	Environmentally sound disposal of accumulators.

Please contact our service hotline listed above for a complete list of our services or send us an email request.

12.4 Service log

Always enter all maintenance and service work performed on the UPS device into the service log.

Date	Tasks performed	Performed by

13. Technical data

13.1 ADIRA T

ADIRA T Model		700 700 XL	1000 1000 XL	1500 1500 XL	2000 2000 XL	3000 3000 XL
Capacity	Nominal capacity in VA/W	700/700	1000/1000	1500/1500	2000/2000	3000/3000
Autonomous time 100/50% load	Standard equipment in min.	10 / 24	6 / 15	3 / 9	6 / 16	3 / 10
	Higher autonomous times	By request				
Technology	Online double convertor	VFI-SS-111 acc. to IEC 62040-3				
Phases	Input / Output	1 phase / 1 phase				
Input	Nominal voltage	220/230/240VAC				
	Input voltage range	160~300VAC				
	Input frequency range	45~55Hz/54~66Hz (automatic recognition)				
	Circuit feedback THDi	<5%				
Output	Output voltage	220/230/240VAC				
	Voltage regulation	±1%				
	Frequency range	50/60 ± 0.2 Hz				
	Changeover time	none				
	Overload standard operation	100%～105%: Continuous operation; 105%～125%: > 5 min; 125%～150%: > 30 s; >150%: > 500 ms				
	Voltage form	Sine				
Efficiency	Standard operation	93%			96%	
	ECO mode	>99%				
Battery	Voltage	36VDC			72VDC	
	Capacity (Ah)	12V/9Ah				
	Type	Sealed maintenance-free lead-fleece battery				
	Expected service lifespan	5 years (optional 10 years)				
	Maximum charging current	1.5 A / 8 A (XL version)				
	Re-charging time	up to 90% in 3 hours typically / XL versions depending on battery equipment				
Communication	Interfaces	RS 232, USB (incl. USB HID function), relay contact, RPO				
	Expansion slot	1 x for optional SNMP or relay card				
	Display	LCD display und LED displays				
Measurements/ Weight	Dimensions of UPS (HxWxD in mm)	220x145x404			318x192x428	
	Dimensions of battery pack (HxWxD in mm) (optional and XL versions)	220x145x404			318x192x428	
	Weight of USP in kg incl. batteries	14	14	14.3	26.0	26.4

	Weight of UPS in kg XL version w/o batteries	6.4	6.4	6.7	11.0	11.4
	Weight of battery pack in kg	12/19			24/39	
	Protection class	IP20				
Connections	Input	IEC (10 A)	IEC (10 A)	IEC (16 A)	IEC (16 A)	IEC(16A)XL hard wired
	Output	4 x IEC C13 (10A)	4 x IEC C13 (10A)	4 x IEC C13 (10A)	8 x IEC C13 (10A)	8 x IEC C13 (10A) 1 x IEC C20 (16A)
Ambient conditions	Temperature	0-40° C (at 80% load up to 45° C)				
	Humidity	20~90% (non-condensing)				
	Operating noise	<40 dB (1 m / with a typical load)			<45 dB (1 m / with a typical load)	
Protection/ Standards	Safety	IEC/EN62040-1, IEC/EN60950-1				
	EMV	IEC/EN62040-2 Class C2, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4 IEC61000-4-5, IEC61000-4-6, IEC61000-4-8				
	Certificates	CE				

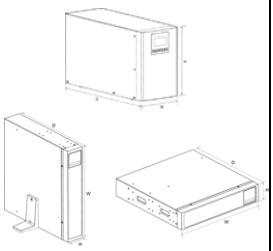
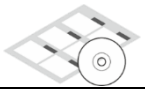
13.2 ADIRA RT

ADIRA RT Model		700 700 XL	1000 1000 XL	1500 1500 XL	2000 2000 XL	3000 3000 XL
Capacity	Nominal capacity in VA/W	700/700	1000/1000	1500/1500	2000/2000	3000/3000
Autonomous time 100/50% load	Standard equipment in min.	10 / 24	6 / 15	3 / 9	6 / 16	3 / 10
	Higher autonomous times	by request				
Technology	Online double-conversion	VFI-SS-111 according to IEC 62040-3				
Phases	Input / output	1 phase / 1 phase				
Input	Nominal voltage	220/230/240VAC				
	Input voltage range	160~300VAC				
	Input frequency range	45~55Hz/54~66Hz (automatic recognition)				
	Circuit feedback THDi	<5%				
Output	Output voltage	220/230/240VAC				
	Voltage regulation	±1%				
	Frequency range	50/60 ± 0.2 Hz				
	Changeover time	none				
	Overload standard operation	100%～105%: Continuous operation; 105%～125%: > 5 min; 125%～150%: > 30 s; >150%: > 500 ms				
	Voltage form	Sine				
Efficiency	Standard operation	93%			96%	

	ECO operation	>99%				
Battery	Voltage	36VDC			72VDC	
	Capacity (Ah)	9Ah				
	Type	Sealed maintenance-free 12V lead-fleece battery				
	Expected service lifespan	5 years (optional 10 years)				
	Maximum charging current	1.5 A / 8 A (XL version)				
	Re-charging time	up to 90% in ca. 3 hours typically / XL versions depending on battery equipment				
Communication	Interfaces	RS 232, USB (incl. USB HID function), relay contact, RPO				
	Extension slot	1 x for optional SNMP or relay card				
	Display	LCD display and LED displays				
Measurements / Weight	Dimensions of UPS (HxWxD in mm)	85.5(2HE) x 438 x 445			85.5(2HE) x 438 x 600 85.5(2HE) x 438 x 505 (short version)	
	Dimensions of battery pack (HxWxD in mm) optional and XL versions	85.5(2HE) x 438 x 445			85.5(2HE) x 438 x 600 85.5(2HE) x 438 x 445 (short version)	
	Weight of UPS in kg incl. batteries	15.5	15.5	15.8	25.7	26.2
	Weight of UPS in kg XL version w/o batteries	8.0	8.0	8.2	10.6	11.0
	Weight of battery pack in kg	15/23			25/40	
	Protection class	IP20				
Connections	Input	IEC (10 A)			IEC (16 A)	IEC (16 A)
	Output	8 x IEC C13 (10A)			8 x IEC C13 (10A)	8 x IEC C13 (10A) 1 x IEC C20 (16A)
Ambient conditions	Temperature	0-40° C (at 80% load up to 45° C)				
	Humidity	20~90% (non-condensing)				
	Operation noise	<45 dB (1 m / with a typical load)			<50 dB (1 m / with a typical load)	
Protection/ Standards	Safety	IEC/EN62040-1, IEC/EN60950-1				
	EMV	IEC/EN62040-2 Class C2, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8				
	Certificates	CE				

14. Scope of delivery

The following is a list of the scope of delivery; compare these items with the received goods. Please inform us immediately if any items or components are missing.

Quantity	Item or item no.	Function / view:	Description:
1 x	UPS		ADIRA T and RT, (depending on your order)
1 x	Mains cable: cold device cable in accordance with IEC 60320		Type of plug: C13 (700, 1000), C19 (2000, 3000)
1x	Output cable: cold device cable in accordance with IEC 60320		Type of plug: C13 / C14
1x	USB		Type of plug: Type A, in accordance with type B
1x	Serial		RS232 cable (1:1)
1x	EPO		EPO plug with bridge, screwable
1x	Software		Software (download link) Chapter 6.4 UPS Management Software
1 x	Operating manual		Operating manual English translation from German V 1.1

15. Optional accessories

The components, devices, and/or equipment listed below are accessories that are suitable for the ADIRAT and RT series and have been tested and approved by EFFEKTA Regeltechnik GmbH.

15.1 External battery bank and connection cable

Every UPS device requires an energy storage unit to supply the loads with its stored energy during a power failure. External battery banks are then installed either as individual energy storage systems or as supplements to the internal battery bank in order to achieve an extension of the autonomous time and/or conform to the required load conditions.

Due to the various customer requirements, the battery banks are individually constructed in their size and fitting.

Please contact our sales and service centers to develop a suitable battery bank concept for you.

15.2 External bypass

An external bypass system allows the operation of the loads in two different paths. In the UPS operation (Fig. 15-1), the UPS system is integrated into the current path and the loads are protected in the usual manner. In the bypass mode (Fig. 15-2), the loads are directly connected to the mains power supply and the input and output are isolated.

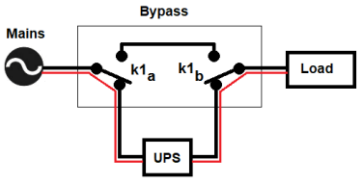


Fig. 15-1 UPS mode

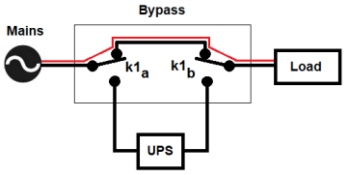


Fig. 15-2 Bypass mode

In this case, maintenance and service tasks on the UPS or the battery bank can be performed faster and safer.
On rare occasions, the UPS or its components can also be replaced without disconnecting the loads. Furthermore, the application of an external bypass enables an economical and manageable installation of the UPS device.

15.3 Communication adapter SNMP

The SNMP adapter integrates the UPS in a network and communicates via TCP/IP, Telnet or FTP. After entering a personal IP address, the UPS is responsive from every site; it is particularly interesting for the remote administration/maintenance of the device.

Fig. 15-3 SNMP adapter for connecting the UPS to a network.

The SNMP adapter can be inserted into the adapter slot (INTELLIGENT SLOT) of the UPS without difficulty and must only be connected with a mains cable.

15.4 Communication adapter, relay card (Z0C/AS400)

The relay card also belongs to the intelligent extension cards and is used in the direct and potential-free coupling with external management and/or machines. This allows the UPS status to be transferred to superordinate controls in real time.

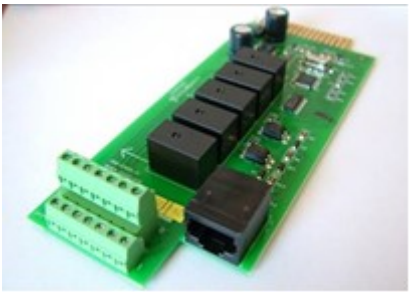


Fig. 155-4 Relay card AS400 for real time control of the UPS.

The following signals are given here for requests or management:

Function:	Connection type:
Mains power failure	Output
Battery bank voltage low	Output
Bypass mode	Output
UPS error	Output
SHUT DOWN process	Output
UPS collective alarm	Output
Test mode	Output
Overload	Output
Remote solution: SHUT DOWN	Input
EPO	Input
Remote solution UPS On/Off	Input

All inputs/outputs are double isolated or potential-free. The relay card can be inserted in the adapter slot (INTELLIGENT SLOT) of the UPS without difficulty and must then be coupled with the superordinate controls via a signal cable. Furthermore, the card can be configured so that the configuration and the switching characteristic can essentially be defined.

Please refer to the operating manual for the relay card for details about the card and the connection.

Please contact our sales and service centers for additional information on these accessory products.

16. Wear parts list

The following item(s) listed below can show regular wear and are excluded from the warranty for this UPS:

Wear part	Function	Item number
XXXX XX XX ** Accumulator (BATTERY) 12 V xx Ah	Energy storage	Depending on assembly!

** Please check your delivery documents for the battery bank for the name and identification of the wear parts for the accumulators or contact the service hotline.

17. Declaration of conformity

Units labelled with a CE mark fulfill the EU harmonized standards and regulations.

The EU declaration of conformity for this product is available upon request. Please contact our ⇨ 11 Service hotline

EFFEKTA

innovating power.

EFFEKTA Regeltechnik GmbH
Rheinwaldstrasse 34
78628 Rottweil, Germany