DEWETRON

DW3-UPS-DC

TECHNICAL REFERENCE

EN ISO 14001

ISO 9001

Preface

Welcome to the world of DEWETRON!

This guide has been carefully designed to help you maximize the value and performance of your DEWETRON system – beginning from the moment you unbox it and continuing throughout its entire service life. Whether you're setting up your system for the first time or maintaining it years down the line, this manual offers essential information to support long-term, efficient, and safe operation.

Inside, you will find all technical data, safety guidelines, and detailed advice on how to properly maintain and care for your system. While this guide provides a strong foundation, it is not intended to substitute for comprehensive, hands-on training. Users are encouraged to seek formal instruction for optimal use of the equipment.

The documentation includes both operational procedures and vital safety and maintenance instructions that all users must follow. Adherence to these guidelines is essential for ensuring reliable, error-free operation and extending the lifespan of your DEWETRON system.

Intended use

The DW3-UPS-DC is an external UPS and multi-battery charger with an isolated DC input for DEWE2/3 instruments, delivering a total output power of 250 W. The DW3-UPS-DC is mechanically compatible with our DEWE2-A4/M4 and DEWE3-A4/M4 as well as with the TRIONet(3) instruments. For flexible use, there are also longer cables available.

The DW3-UPS-DC comes with 3x 80.6 Wh batteries as well as an external 115 / 230 V_{AC} adapter for charging the batteries.

Scope of supply

1x DW3-UPS-DC uninterruptible power supply box

3x 80.6 Wh batteries

1x external 115 / 230 V_{AC} power supply for battery charging (450 W)

1x USB-C cable for data connection to DEWE3-A4/M4

1x ~25 cm cable for power supply connection to DEWE3-A4/M4

Contents

Safety

Safety instructions

The following section contains warning and safety instructions that must be observed by the user. Faultless operation can only be guaranteed if these instructions are observed.

General safety instructions

- Use this system under the terms of the specifications only to avoid any possible danger. If the unit is used in a manner not specified by the manufacturer the protection can be impaired.
- Maintenance is to be executed by qualified staff only.
- DO NOT use the system if equipment covers or shields are removed. If you assume the system is damaged, have it examined by authorized personnel only.
- Any other use than described above may damage your system and is attended with dangers such as short-circuits, fire or electric shocks.
- The whole system must not be changed, rebuilt or opened.
- If you assume a more riskless use is not provided anymore, the system has to be rendered inoperative and should be protected against inadvertent operation. It is assumed that a more riskless operation is not possible anymore, if
  - the system is damaged obviously or causes strange noises.
  - the system does not work anymore.
  - the system has been exposed to long storage in adverse environmental.
  - the system has been exposed to heavy shipment strain.
- The warranty is void if damages caused by disregarding this manual. For consequential damages NO liability will be assumed.
- The warranty is void if damages to property or persons caused by improper use or disregarding the safety instructions.
- Unauthorized changing or rebuilding the system is prohibited due to safety and permission reasons (CE). Exception: changing batteries.
- Prevent using metal bare wires as there is a risk of short-circuit and fire hazard.
- DO NOT use the system before, during or shortly after a thunderstorm (risk of lightning and high energy overvoltage). An advanced range of application under certain conditions is allowed with therefore designed products only. For details refer to the specifications.
- Make sure that your hands, shoes, clothes and as well as the floor, the system or measuring leads, integrated circuits etc. are dry.
- Use measurement leads or measurement accessories aligned to the specification of the system only. Fire hazard in case of overload.
- Do not disassemble the system. There is a high risk of getting a perilous electric shock. Capacitors still might charged, even the system has been removed from the power supply.
- The measuring systems are not designed for use at humans and animals.
- Contact a professional if you have doubts about the method of operation, safety or the connection of the system.
- Handle the product with care. Shocks, hits and dropping it even from an already lower level may damage your system. For exact values refer to the enclosed specifications.
- Also consider the detailed technical reference manual as well as the security advices of the connected systems.

Electrical safety instructions

- With this product, only use the power cable delivered or defined for the host country.
- DO NOT connect or disconnect sensors, probes or test leads, as these parts are connected to a voltage supply unit.
- The system is grounded via a protective conductor in the power supply cord. To avoid electric shocks, the protective

conductor has to be connected with the ground of the power network. Before connecting the input or output connectors of the system, make sure that there is a proper grounding to guarantee potential free usage. For countries, in which there is no proper grounding, refer to your local legally safety regulations for safety use.

- Note the characteristics and indicators on the system to avoid fire or electric shocks. Before connecting the system, carefully read and understand the corresponding specifications in the product manual.
- The inputs are not, unless otherwise noted (CATx identification), for connecting to the main circuits of category II, III and IV. The measurement category can be adjusted depending on module configuration.
- The power cord or the main power switch separates the system from the power supply. Do not block the power cord or main switch, since it has to be accessible for the users.
- Any direct voltage output is protected with a fuse against short-circuits and reverse-polarity, but is NOT galvanically isolated (except it is explicit marked on the system).
- Supply overvoltage category is II.
- The system must be connected and operated to an earthed wall socket at the AC mains power supply only (except for DC systems).
- DO NOT touch any exposed connectors or components if they are live wired. The use of metal bare wires is not allowed. There is a risk of short-circuits and fire hazard.
- The assembly of the system is equivalent to protection class I. For power supply, only the correct power socket of the public power supply must be used, except the system is DC powered.
- Be careful with voltages >25 V_{AC} or >35 V_{DC}. These voltages are already high enough in order to get a perilous electric shock by touching the wiring.
- Unless otherwise stated, the maximum input voltage for measuring cards is 70 V_{DC} and 46.7 V_{PEAK}
- The electrical installations and equipments in industrial facilities must be observed by the security regulations and insurance institutions.

Ambient safety notices

- This product is intended for use in industrial locations. As a result, this product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interferences to the reception of radio and television broadcasts.
- Do not switch on the system after transporting it from a cold into a warm room and vice versa. The thereby created condensation may damage your system. Acclimatise the system unpowered to room temperature.
- Any use in wet rooms, outdoors or in adverse environmental condition is not allowed. Adverse environmental conditions are:
  - Moisture or high humidity
  - Dust, flammable gases, fumes or dissolver
  - Thunderstorm or thunderstorm conditions (except assembly PNA)
  - Electrostatic fields etc.
- DO NOT use the system in rooms with flammable gases, fumes or dust or in adverse environmental conditions.
- Direct exposure of any DEWETRON product to strong sunlight or other heat radiation shall be prevented, as this could excessively heat up the product and lead to permanent damage of the product.
- The use of the measuring system in schools and other training facilities must be observed by skilled personnel.

Safety notices during operation

- During the use of the system, it might be possible to access another parts of a more comprehensive system. Read and follow the safety instructions provided in the manuals of all other components regarding warning and security advices for using the system.
- The product heats during operation. Make sure there is adequate ventilation. Ventilation slots must not covered. Only fuses of the specified type and nominal current may be used. The use of patched fuses is prohibited.

Standards and norms

This product has left the factory in safety-related flawless and proper condition.

In order to maintain this condition and guarantee safety use, the user has to consider the security advices and warnings in this manual.

EN 61326-3-1:2008

IEC 61326-1 applies to this part of IEC 61326 but is limited to systems and equipment for industrial applications intended to perform safety functions as defined in IEC 61508 with SIL 1-3.

The electromagnetic environments encompassed by this product family standard are industrial, both indoor and outdoor, as described for industrial locations in IEC 61000-6-2 or defined in 3.7 of IEC 61326-1.

Equipment and systems intended for use in other electromagnetic environments, for example, in the process industry or in environments with potentially explosive atmospheres, are excluded from the scope of this product family standard, IEC 61326-3-1.

Devices and systems according to IEC 61508 or IEC 61511 which are considered as “operationally welltried”, are excluded from the scope of IEC 61326-3-1.

Fire-alarm and safety-alarm systems, intended for protection of buildings, are excluded from the scope of IEC 61326-3-1.

Typographic conventions

Safety and warning notices

WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Notices

NOTICE

This text indicates situations or operation errors which could result in property damage or data loss.

INFORMATION

This text indicates important information or operating instructions. Not observing these instructions could inhibit or impede you from successfully completing the tasks described in this documentation.

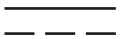
Symbols

Denotes a warning that alerts you to take precautions to avoid injury. When this symbol is shown on the product, refer to the technical reference manual (ISO 7000-4034; 2004-01).

Indicates hazardous voltages.

Observe precautions for handling electrostatic sensitive devices.

Indicates the chassis terminal (IEC 60417-5020; 2002-10).



Direct current (IEC 60417-5031; 2002-10)

Alternate current (IEC 60417-5032; 2002-10)

Both direct and alternating current (IEC 60417-5033; 2002-10)

Three-phase alternating current (IEC 60417-5032-1; 2002-10)

Protective conductor terminal (IEC 60417-5019; 2006-08)

Equipment protected throughout by double insulation or reinforced insulation (IEC 60417-5172; 2003-02)

On (power) (IEC 60417-5007; 2002-10)

Off (power) (IEC 60417-5008; 2002-10)

General information

Environmental considerations

The following information refers to the environmental impact of the product and the product end-of-life handling. Observe the following guidelines when recycling a DEWETRON system:

- System and components recycling

The production of these components has required the extraction and use of natural resources. The substances contained in the system could be harmful to your health and to the environment if the system is improperly handled at its end of life. Recycle this product in an appropriate way to avoid an unnecessary pollution of the environment and to keep natural resources.

This symbol indicates that this system complies with the European Union's requirements according to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste of Electrical and Electronic Equipment (WEEE). DEWETRON systems and their components can be returned at the end of their service life to a DEWETRON branch, our partner companies or your DEWETRON contact. urther information about recycling can be found on the DEWETRON website (www.dewetron.com).

- Restriction of hazardous substances

  Our products meet the requirements of the European Union's Restriction of the Use of Certain Hazardous Substances (RoHS) Directive 2011/65/EU.

  The six restricted substances (cadmium, lead, mercury, hexavalent chromium, polybrominated biphenyls and polybrominated diphenylethers) are present below the specified maximum concentration value by weight in homogeneous materials. Some RoHS Compliant products may contain lead (Pb) in applications for which exemptions have been granted by the RoHS Directive.

Problematic network stacks

Often intrusive IT software or network processes can interfere with the primary function of the DEWETRON system: to record data. Therefore we recommend strongly against the installation of IT/MIS software and running their processes on any DEWETRON data acquisition system, and cannot guarantee the performance of our systems if they are so configured.

Warranty information

A copy of the specific warranty terms applicable to your DEWETRON product and replacement parts can be obtained from your local sales and service office.

Legal information

Restricted rights legend

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DEWETRON GmbH
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8074 Grambach
Austria

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Printing history

Refer to the page bottom for printing version.

Main system

Key facts

- DC power supply with 3 hot swappable batteries
- 250 W power for one hour with internal batteries
- Output voltage of 24 to 33.6 V_{DC} when powered from batteries or 35.5 V_{DC} when powered from DC
- Charge and discharge state via USB-C
- Including external 115 / 230 V_{AC} adapter
- 3 operation modes: BAT, UPS, FLIGHT
- OXYGEN plugin for seamless integration and remote control

System specifications

DW3-UPS-DC		
Input		
Rated input voltage	11 to 32 V_{DC} (input galvanically isolated and protected against reverse polarity)	
Max. input current	30 A	
Max. input power	280 W	
Input connector	2-pin female LEMO connector (EGJ.3B.302)	
Output		
Output voltage	35.5 V_{DC} (when powered from DC)	
	24 to 33.6 V_{DC} (when running from internal batteries)	
Output power	max. 250 W (with 3 batteries installed)	
Output current	7.1 A (when powered from DC)	
	10.4 A (when powered from 3 internal batteries @ 24 V output)	
Output connector	2-pin female LEMO connector (EGG.2B.302)	
Batteries		
Type	Li-ion PH3059HD29 (item code: BAT-28V-81WH)	
Nominal voltage	28.8 V	
Energy density	80.6 Wh (241.8 Wh with 3 batteries installed)	
Battery slots	3 battery slots available (3 batteries included with delivery)	
Expectable runtime with 3 batteries	**DEWE3-A4**	**TRIONet3**
– Average configuration i.e.	2x TRION3-18xx-POWER: ~2 h	1x TRION3-18xx-POWER: ~8 h
– Max. config.	4x TRION3-18xx-MULTI: ~1.2 h	2x TRION3-18xx-MULTI: ~4.5 h
Environmental specifications		
Operating temperature	0 to +50 °C when discharging batteries 0 to +40 °C when charging batteries	
Storage temperature	-20 °C to +60 °C	
Humidity	10 % to 80 %, non condensing; ≤80 % rel. humidity	
Dimensions (W x H x D)	approx. 320.5 x 273 x 46 mm (12.61 x 10.75 x 1.81 in)	

Tab. 1: System specifications

DW3-UPS-DC	
Weight (box with 3 batteries)	3.42 kg
– Battery (1 pc)	0.52 kg
– Box	1.86 kg
– Power adapter	1.04 kg
Vibration test; EN 60068-2-6	
Shape	Sine
Frequency range	10–150 Hz
Acceleration	20 m/s²
Sweep rate	1 oct./min.
Duration test in 3 directions	20 cycles
Vibration test; EN 60721-3-2; Class 2M2	
Shape	Random
Frequency range	10–200 Hz
Spectral acceleration density	$\frac{1\ m/s^2}{Hz}$ from 10–200 Hz
Duration	30 min per axis
Shocktests; EN 60068-2-27	
Pulse form	Half-sine
Acceleration amplitude	15 g
Duration	11 ms
Direction	Test in 3 axes, 3 shocks in each axis and direction

Tab. 1: System specifications

Accessories

Accessories	
BAT-28V-CHARGER-1	Desktop battery charger for 1x 28.8 V battery, incl. external AC adapter. Applicable for DEWE3-M8s and DW3-UPS-DC.
BAT-28V-81WH	Lithium-ion battery, 28.8 V, 81 Wh, max. 12 A, weight 520 g

Tab. 2: Accessories

Dimensions

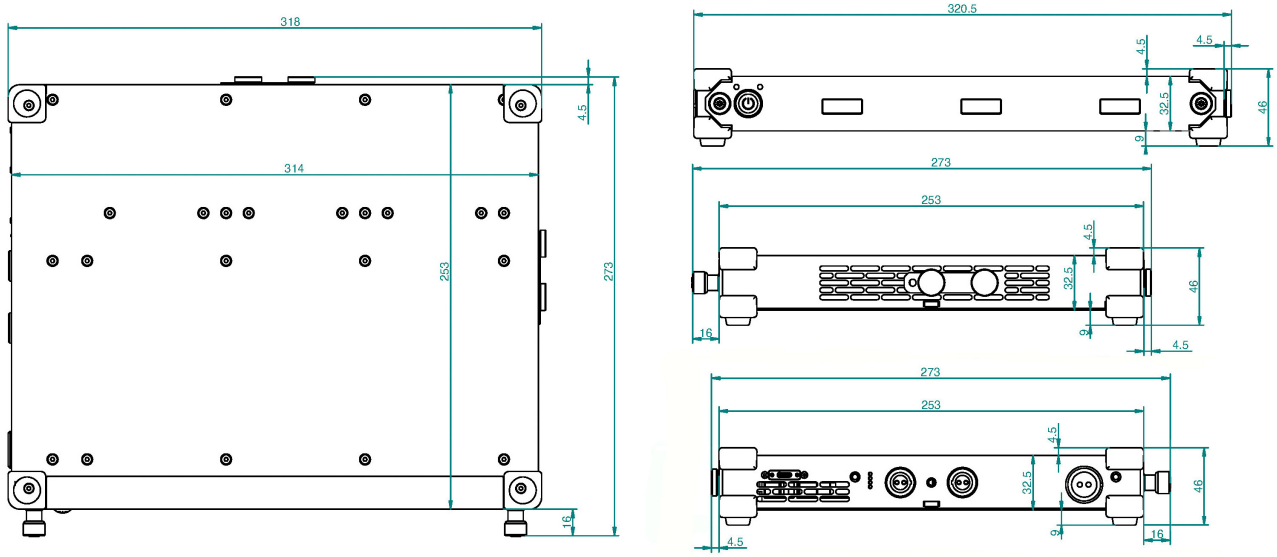


Fig. 1: Dimensions (in mm)

Connections and ports

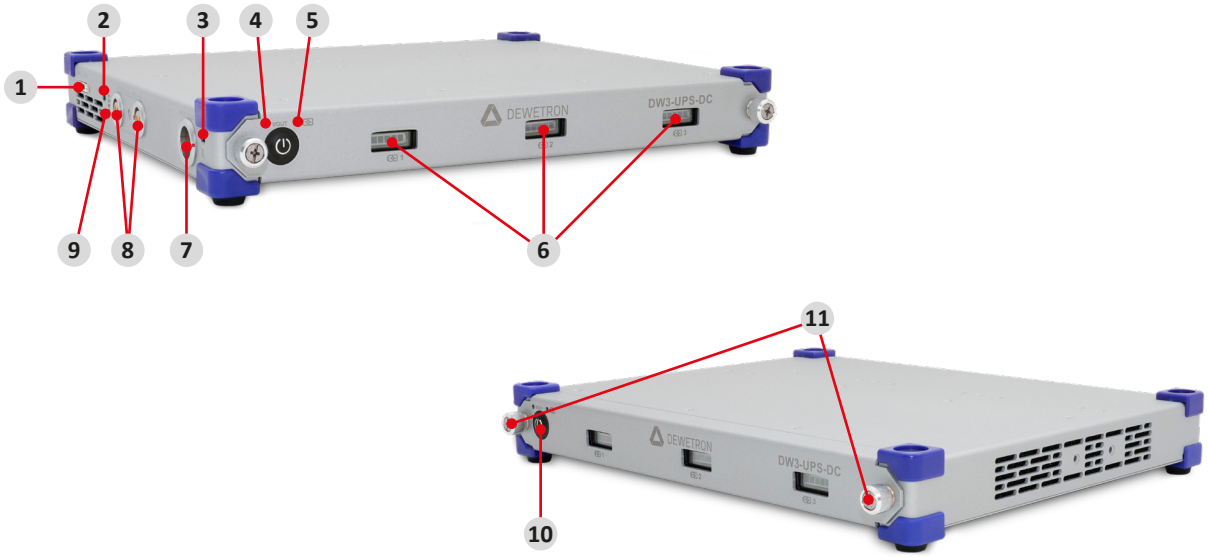


Fig. 2: Connections and ports

1. USB-C interface
2. Mode button and mode LEDs
3. Mute button for battery alarm
4. VOUT LED
5. Battery LED
6. Cutout for battery status LCD
7. Power supply input connector connector (LEMO EGJ.3B.302)
8. Power supply output connectors (LEMO EGG.2B.302)
9. VIN LED
10. Power button and LED
11. Knurled-head screws for battery cover

Power supply

Power supply output connectors

The DW3-UPS-DC outputs a voltage between 24 to 33.6 V_{DC} when running on batteries or 35.5 V_{DC} with external power supply connected.

Power supply output pin assignment (Lemo EGG.2B.302)

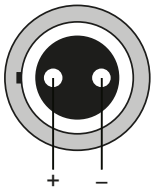


Fig. 3: Pin assignment for power supply output connectors

Connection example with a DEWE3-A4/M4

The DW3-UPS-DC comes with a cable set of ~25 cm for DEWE3-A4/M4. Longer cables for flexible use are optionally available. Connect the power supply output of the DW3-UPS-DC with the power supply input of the DEWE3-A4/M4.

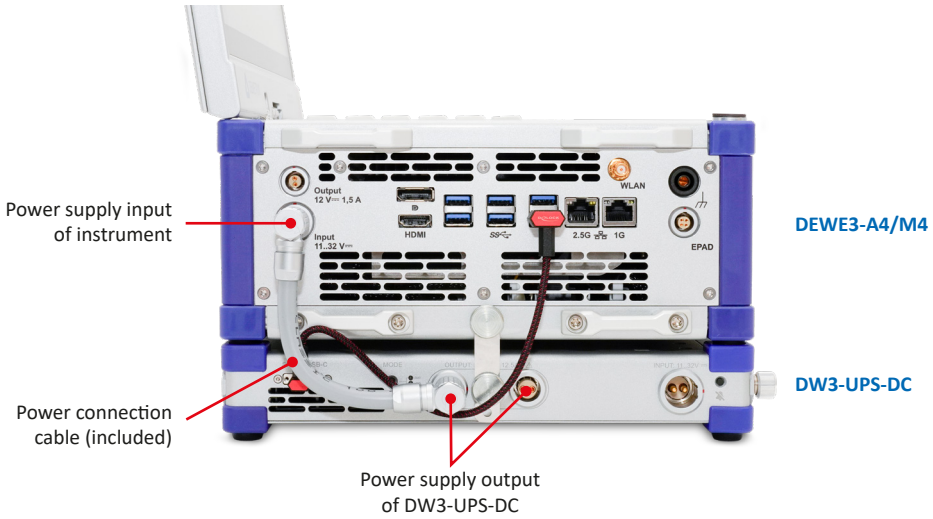
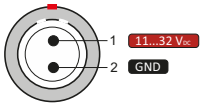


Fig. 4: Connection example: DW3-UPS-DC with DEWE3-A4

Power supply input connector



The DW3-UPS-DC is delivered with a standard external AC/DC power supply (100–240 V_{AC} IN).

Fig. 5: Pin assignment for power supply input connector 11..32 V

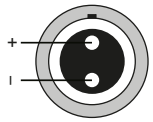
Internal DC power supply

Input connector internal power supply	
Input	
– Rated input voltage	11..32 V_{DC}
– Power	450 W
– Connector	2-pin male LEMO EGJ.3B.302

Tab. 3: Specifications input connector 450 W DC power supply

External AC/DC power supply

Power supply pin assignment:



Connector type
2-pin female
LEMO FGJ.3B.302.CLLD92

Fig. 6: External AC/DC power supply

450 W AC/DC power supply	
Input	
– Rated input voltage	100 .. 240 V_{AC} (max. 90 .. 264 V_{AC})
– Input frequency	50 .. 60 Hz
– Current	max. 5.3 A
Output	
– Voltage	24 V_{DC}
– Current	18.75 A (max. load)
– Output power	max. 450 W

Tab. 4: Specifications external 450 W AC/DC power supply

USB-C interface

The USB-C interface connector meets standard USB-C pin assignment. This interface connects e.g. a DEWE3-A4/M4 with the DW3-UPS-DC. With the OXYGEN Power Manager plugin it is possible to access information about the charging state, condition and capacity of the batteries. For more information about the various software plugins refer to *Operation modes on page 20*.

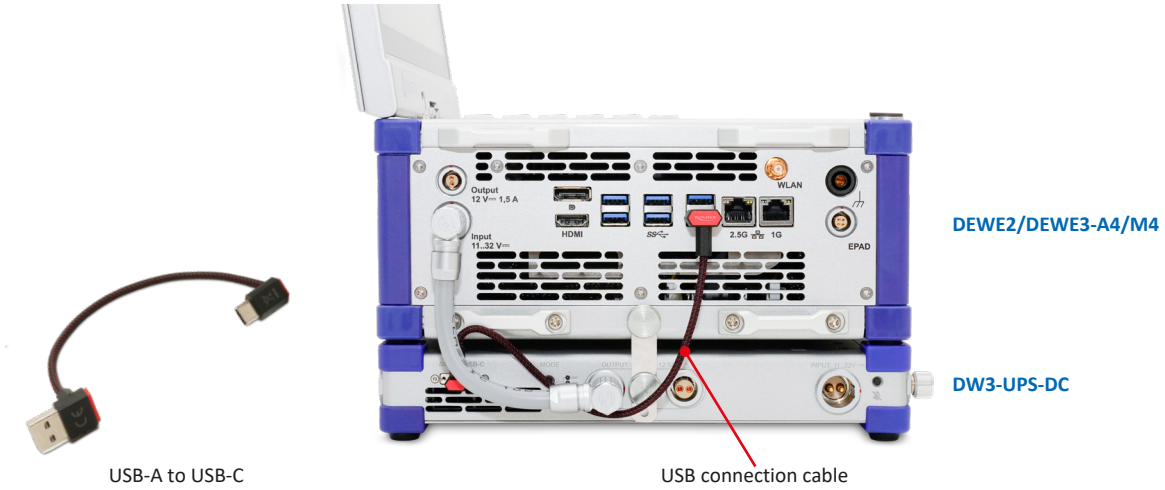


Fig. 7: USB connection between DW3-UPS-DC and DEWE3-A4/M4

Knurled-head screws for battery cover

To access the batteries, loosen the screws at the front panel and remove the battery cover. The knurled-head screws are attached to the battery cover to prevent them from getting lost. For more information about how to install or remove a battery, refer to *Installing/removing a battery on page 22.*

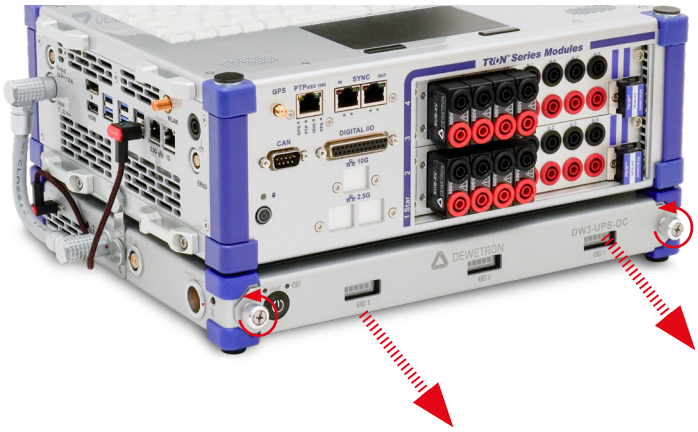


Fig. 8: Knurled-head screws for battery cover

Buttons and LEDs

Power button and LED

A short press on the power button wakes up a sleeping device and activates the outputs. When the outputs are active, the VOUT LED will be set solid green.

When the outputs are already on, a short press on the power button has no effect. To turn the system off, a long press of 4 seconds is required. When the output is off, the VOUT LED will also be turned off.

When the outputs are on, but the delivered power at the outputs are under P_limit_shutdown, the device will enter the 30 seconds waiting state. In this state, the VOUT LED will be blinking green. A short press on the power button will deactivate the power saving feature once and the outputs will remain on even with the output power under P_limit_shutdown.

The power button LED has 3 states:

Color/mode	Status
GREEN (solid)	System is on after pressing the power button or after connecting an input voltage to the system.
GREEN (flashing)	Outputs are on, but the power at the outputs are under P_limit_shutdown.
NONE (off)	System is completely off or in sleep mode.

Tab. 5: Power button LED indication

Mute button for battery alarm

The device is equipped with a buzzer that beeps when the battery levels are under a configurable limit. The limits and the activation or deactivation of this function can be configured via the OXYGEN plug-in.

If the default buzzer state is enabled, the sound of the buzzer can be deactivated by pressing this button. The battery LED that informs about low battery will still indicate this status, but the device will no longer emit sounds in the current discharging cycle. The configuration is, however, not overwritten and will be reset at the next power up.

It is important to notice that the mute button only works when the system is in one of the low battery states. Pressing the button in this situation will emit a short sound feedback to confirm that the command has been successfully accepted. If this button is pressed without the battery being low, nothing will happen.

The buzzer rings according to the charge level of the batteries. These levels can be configured via the OXYGEN plug-in. The DW3-UPS-DC offers 3 battery slots, i.e. the average of the 3 batteries will be considered.

For example, if only one battery with 45 % of capacity is installed, the device will interpret that as a low battery situation (average = 15 %).

Beep	Status
1x beep tone	Low battery alarm (by default 20 %)
2x beep tone	Critical battery alarm (by default 12 %)

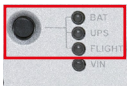
Tab. 6: Buzzer

The interval between the beep tones represents the rate in which the batteries are being discharged. The 3 current rate intervals are:

- Rate ≤ 3 A: large interval between beep tones
- Rate ≥ 3 A and rate ≤ 9 A: medium interval between beep tones
- Rate ≥ 9 A: short interval between beep tones

INFORMATION The buzzer intervals can be permanently deactivated in the OXYGEN plug-in.

Mode button and mode LEDs



The mode button is used to change between the modes. When the button is pressed, a new mode is cyclically selected, depending on the current state. So, from the current state it changes to:

- BAT mode → UPS mode
- UPS mode → Flight mode
- Flight mode → BAT mode

The currently selected mode can be determined from the mode LED.

There are 3 LEDs that are used to represent the selected mode from the available Operation modes. The following states apply:

- FLIGHT LED: green when the flight mode is active
- UPS LED: green when the UPS mode is active
- BAT LED: green when the BAT mode is active

VIN LED

The VIN LED indicates the state of input voltage supply (see more in section *Power supply input connector on page 14*). The 3 states of this LED are:

Color/mode	Status
GREEN (solid)	Input voltage is between operating limits (by start or in runtime).
RED (solid)	The input voltage is outside of operating limits and the outputs are forced to an off state.
NONE (off)	No input voltage detected

Tab. 7: VIN LED indication

VOUT LED

The VOUT LED is used to display information about the output channels. It is also used to inform about a critical battery error, system error or a short circuit at the output. The following LED states apply:

Color/mode	Status
GREEN (solid)	Output is active
GREEN (flashing)	Outputs are on, but the system will enter sleep mode in 30 seconds, unless it is deactivated via the OXYGEN Power Manager or a power button press.
RED (solid)	Battery fault, critical system fault, or short circuit at the output.
NONE (off)	Output is off.

Tab. 8: VOUT LED indication

Battery LED

The battery LED is used to display information regarding the batteries. The following states apply:

Color/mode	Status
GREEN (solid)	Batteries fully charged
GREEN (flashing)	Batteries charging
YELLOW (solid)	Discharging batteries
YELLOW (flashing)	Charging suspended (caused by software modes, temperature limits or safety reasons)

Color/mode	Status
RED (solid)	Batteries critically low
RED (flashing)	Batteries low warning
NONE (off)	No battery installed

Tab. 9: Battery status LED indication

Battery bay

The DW3-UPS-DC has 3 slots for smart battery packs. There are 3 batteries in the default scope of supply. More batteries can be ordered separately (item no. BAT-28V-81WH).

Battery

The battery charge status can be displayed without a separate device. The 5-segment LCD charge level indicator is always active unless the battery is in switch-off mode.

The batteries are hot swappable. Under normal conditions, the system can be operated with a single battery. This allows operation without interruption if the batteries are replaced one after the other.

NOTICE

Only use original batteries or replacements from DEWETRON to avoid damages (Li-ion; item code BAT-28V-81WH).

For externally charging the batteries a charger is also available (item no. BAT-28V-CHARGER-1).

Cutout for battery status LCD

To have a quick look at the battery status at any given time, the DW3-UPS-DC provides some cutouts for the 5 segment LCD charge level indicator of the installed battery packs.

LCD indicator	Status
▮	Between 1 and 20 % charge, 1 LCD segment is filled
▮▮	21–40 % charge, 2 LCD segments are filled
▮▮▮	41–60 % charge, 3 LCD segments are filled
▮▮▮▮	61–80 % charge, 4 LCD segments are filled
▮▮▮▮▮	81–100 % charge, all 5 LCD segments are filled

Tab. 10: Battery status

The LCD charge level indicator will also flash the most significant segment during charge. An intelligent battery controller, integrated in our DEWETRON systems, takes care of the charging and discharging process in order to ensure maximum battery performance and life time.

Working with the system

OXYGEN quickstart guide

Further information on how to operate with OXYGEN find in the corresponding user manual available at: https://ccc.dewetron.com/pl/oxygen

For a more detailed explanation of the OXYGEN software refer to the OXYGEN Technical Reference Manual, which is available at *https://ccc.dewetron.com/pl/oxygen*.

OXYGEN plugin

The most important parameters can be displayed as channels in OXYGEN (Power Manager plugin available from version 7.5). They are automatically displayed in OXYGEN when the DW3-UPS-DC box is connected via USB-C to the DEWETRON DEWE3-A4 data acquisition instrument.

INFORMATION The OXYGEN plugin does not work with a DEWETRON TRIONet3 data acquisition instrument.

The following parameters can be obtained from OXYGEN:

- Battery level in %
- Time to empty in minutes
- Time to full in minutes
- Current in ampere
- Temperature of chassis and each battery in °C
- Fan speed in %

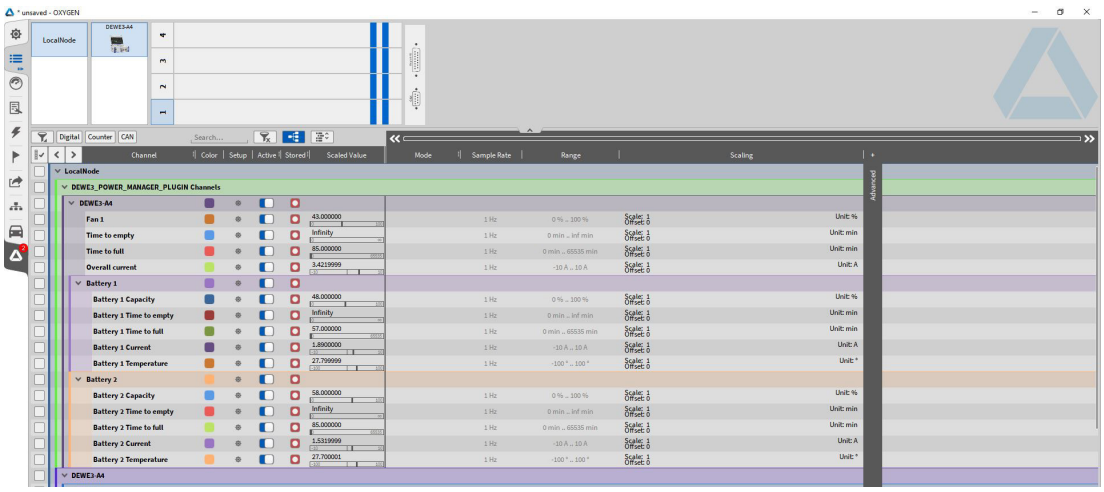


Fig. 9: Power manager plugin overview

Some functions of the DW3-UPS-DC can be changed in the Power Manager plugin, e.g. operating modes, shutdown level, buzzer trigger value, and some functions of the battery saving mode.

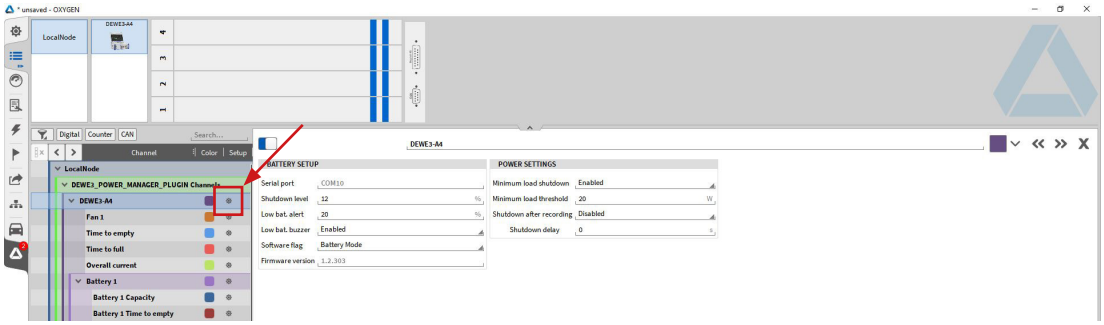


Fig. 10: Power manager plugin sub menu

In the Power Manager battery sub menu various battery parameters can be observed, e.g. health condition, charging state, cycle counter, max. current, temperature range, voltage or battery model.

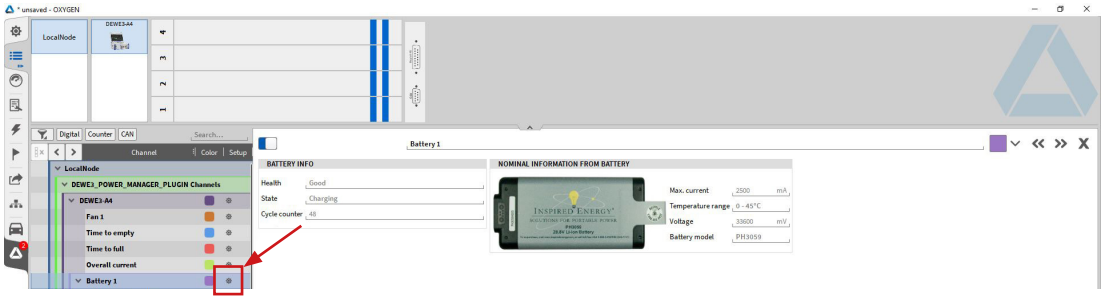


Fig. 11: Power manager plugin battery sub menu

Power saving feature

This device has a power saving feature. The power saving mode protects the input power supply from unnecessary discharging.

If the DW3-UPS-DC is running only on batteries (no input power connected) and the power at the output is below a configurable level (P_limit_shutdown, by default = 25 W), it will go to a low power mode (sleep) after 30 seconds. This minimum power value can be configured via the OXYGEN plug-in.

If the power saving feature is activated, the blinking green VOUT LED indicates that the system will enter sleep mode in 30 seconds. This feature can be disabled once (i.e. only at that time) by pressing the power button when it is blinking. The VOUT LED will stop blinking and remain solid green. After the system is restarted (i.e. after it has been off or in sleep mode), the power saving feature will be activated again.

The power saving feature is available when the system is not connected to the power socket (i.e. when running only with batteries) in BAT and Flight mode.

In UPS mode, the system will always try to enter power saving mode if the output power is below the limits. This can be disabled once by pressing the Power Button when the VOUT LED is blinking.

The power saving mode can also be permanently deactivated via the OXYGEN plug-in.

Operation modes

This device has modes that impact on its behavior. The modes define if the system is allowed to charge and its shut-down procedure. The actual selected mode can be identified from the mode LED.

These modes can be chosen via the OXYGEN plug-in or by pressing the mode button. The three modes are:

Battery (BAT) mode

The BAT mode is the default configuration. In this mode, the user can start the system if the battery capacity is above the minimum level or if it is connected to the power. Moreover, the charging is always permitted if safe conditions are present.

In the case when the VIN power is not present and output power under the P_limit_shutdown for longer than 30 seconds, the system is switched off and goes to sleep-mode.

Uninterruptible power supply (UPS) mode

The UPS mode regards the use of batteries as an emergency supply. The charging is only allowed if the output is active and draining more power than P_limit_shutdown.

If the output power goes under P_limit_shutdown for longer than 30 seconds, the system is switched off and goes to sleep-mode. This happens independently of the state of VIN-power supply (connected or nor), in order not to unnecessarily discharge the external supply.

Flight mode

The flight mode is analog to the BAT mode. However, charging is prohibited. To enable charging again, another software mode needs to be chosen.

In the case when the VIN power is not present and output power under the P_limit_shutdown for longer than 30 seconds, the system is switched off and goes to sleep-mode.

Setup examples

Operation with DC power

DC source,
e.g. car battery

DW3-UPS-DC acts as battery buffer,
e.g. start of engine

Instrument,
e.g. DEWE3-A4

Independent operation

- Up to one hour of operation

DW3-UPS-DC

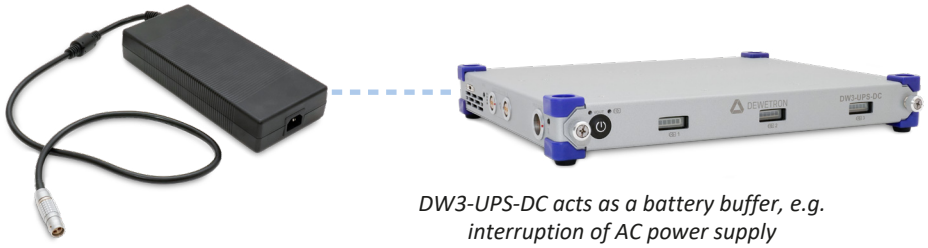
Instrument,
e.g. DEWE3-A4

Operation with AC power

DW3-UPS-DC acts as a battery buffer, e.g.
interruption of AC power supply

Instrument,
e.g. DEWE3-A4

Recharging batteries



DW3-UPS-DC acts as a battery buffer, e.g. interruption of AC power supply

NOTICE

Do not cover the ventilation slots, as this may cause your system to overheat and become damaged.

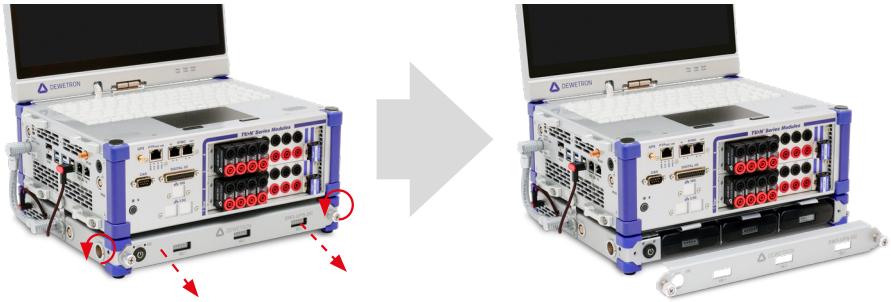
Installing/removing a battery

The DW3-UPS-DC is equipped with 3 smart battery packs which can be exchanged during operation. To replace a battery proceed as follows:

NOTICE

In principle, the batteries are hot-swappable and can be replaced during operation. However, we strongly recommend connecting the device to an external power source to avoid any possible loss of data.

1. Open the covering plate of the battery compartment by loosining the 2 knurled-head fixing screws.



2. Pull out the battery to replace and insert a new one.

   NOTICE If the device is not connected to an external power source, only one battery can be replaced at a time.

3. Reinstall the covering plate and tighten the fixing screws again.

The battery exchanging procedure is now finished.

NOTICE

Disconnect supplied devices from the DW3-UPS-DC output when they are powered off. Store the batteries separately if the system is unused for more than two weeks, otherwise they will deep discharge and could get damaged.

INFORMATION

If a battery is severely discharged, it may take several hours before it is functional again. During this “wake-up charging” process, the battery may not display any bars.

External battery charger (optional)

External battery charger BAT-28V-CHARGER-1	
Power supply	
– Input voltage	100 to 240 V_{AC}, 37.5 V
– Input current	1.8 A_{DC}
Mains cord	PH1000E; 220 V European 2-pin connector with ground recess
Dimensions (w x d x h)	180 x 92 x 58 mm (7.1 x 3.6 x 2.3 in)
Weight	ca. 308 g
Mating connector	7-pin D-SUB (7W2) battery connector

Tab. 11: Specifications external battery charger

From time to time, due to the aging process of the batteries, it is necessary to recalibrate the battery in order to retain the accuracy and reliability of the charge level indicator. This can be achieved with an external battery charger (item no. BAT-28V-CHARGER-1) which is optionally available.

Another advantage of the BAT-28V-CHARGER-1 is that additional batteries can be recharged without being in the measurement system. This allows the measurement system to run non-stop without being connected to the power net, thanks to the hot-swap capability of the battery packs.

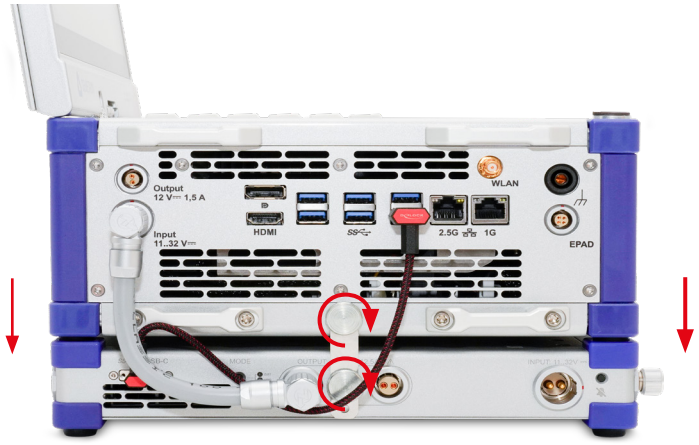
Using the DW3-UPS-DC with other systems

DEWE3-A4/M4 with DW3-UPS-DC

The DW3-UPS-DC can be used with a lot of instruments but the footprint has been designed and developed to match DEWE3-A4/M4 prepared with a mechanical connection.

To do so, proceed as follows:

1. Place your DEWE3-A4/M4 on the DW3-UPS-DC.
2. Make sure it is exactly positioned and fasten the screws of the fixing aid on the right and the left side of the system (included).

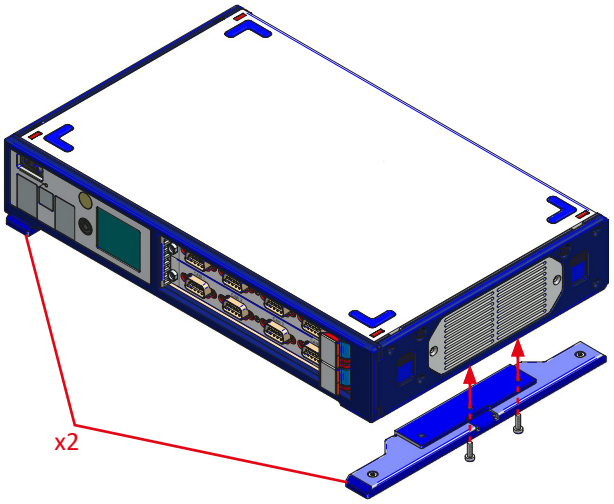


The mounting procedure is now finished.

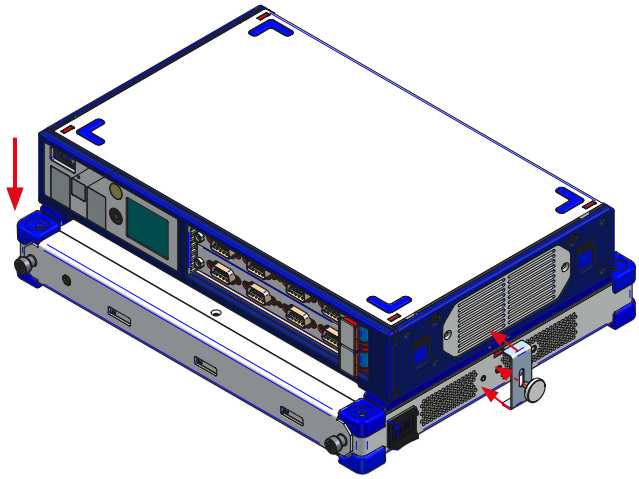
TRIONet3 with DW3-UPS-DC

A TRIONet3 can also be mounted on a DW3-UPS-DC with the appropriate mounting kit available with your TRIONet3. To do so, proceed as follows:

1. Mount the two assembly rails with the included screws at the bottom of the TRIONet3.



2. Place the TRIONet3 on the DW3-UPS-DC as shown in the schematic below and secure it by applying the metal clamp provided.



3. Fasten the metal clamp with the knurled screws on each side of the TRIONet.

The mounting procedure is now finished.

Maintenance and service

The information in this section is designed for use by qualified service personal.

Service intervals

Intervals may vary. Depending on environmental conditions, runtime, etc.

Actions	On demand	At least once a year	Every 5 years
Clean dust from chassis exterior	Depending on environmental conditions	•	-
Clean filters	Depending von environmental conditions, not user-replaceable	-	•
Change chassis fan	Depending von environmental conditions, not user-replaceable	-	•

Fig. 12: Service intervals

Cleaning the system

- Clean surface of the chassis with dry lint-free cloth.

  Do not use harsh chemical cleaning agents.

NOTICE

Many components within the chassis are sensitive to static discharge damage. Always wear a ground wrist strap and service the unit only in static-free environment.

WARNING

Risk of injury

Disconnect all cables before servicing the unit.

Support

DEWETRON has a team of people ready to assist you if you have any questions or any technical difficulties regarding the system. For any support contact your local distributor first or DEWETRON directly.

For Asia and Europe contact:

DEWETRON GmbH
Parkring 4
8074 Grambach
AUSTRIA

Tel.: +43 316 3070
Fax: +43 316 3070-90
E-Mail: support@dewetron.com
Web: http://www.dewetron.com

The telephone hotline is available
Monday to Friday between
08:00 and 17:00 CET (GMT +1:00).

For the Americas contact:

DEWETRON Inc. (HQ USA)
2850 South County Trail, Unit 1
East Greenwich, RI 02818
USA

Tel.: +1 401 284 3750
Toll-free: +1 866 598 3393
Fax: +1 401 284 3750
Email: support@dewetron.com
Web: http://www.dewetron.com

The telephone hotline is available
Monday to Friday between
08:00 and 16:30 EST

Training

DEWETRON offers training at various offices around the world several times each year. DEWETRON headquarters in Austria have a very large and professional conference and seminar center, where training classes are conducted on a regular basis starting with sensors and signal conditioning, A/D technology and software operation.

Dewetron Inc. in the USA also has a dedicated training facility connected to its headquarters, located in Rhode Island.

For more information about training services visit https://www.dewetron.com/academy.

Calibration

Every instrument needs to be calibrated at regular intervals. The standard norm across nearly every industry is annual calibration. Before your DEWETRON data acquisition system is delivered, it is calibrated at our DEWETRON headquarter. Each of this system is delivered with a certificate of compliance with our published specifications. Detailed calibration reports from our calibration system are available for purchase with each order. We retain them for at least one year, so calibration reports can be purchased for up to one year after your system was delivered.

Service and repairs

We are very sorry that your DEWETRON system is not operating properly. Our team is here to ensure that your DEWETRON product is returned to peak performance as quickly as possible.

Help us to provide you with the best support by following the RMA policy.

Some problems can be solved remotely by our support team. To facilitate a quicker resolution to the problem and save unnecessary shipping costs, we ask you to first have your problem investigated by our technical support before sending your product. Contact details for our support can be found on our website. Describe the error accurately and with as much detail as possible. This helps expedite the repair process.

If a repair is necessary, complete our online RMA form. You will then receive an RMA (Return Material Authorization) number and detailed instructions that identify where to ship the damaged product.

Products arriving at our repair department without RMA require follow-up calls and investigation, which lead to a longer turnaround. Only the team of DEWETRON is allowed to perform any kinds of repairs to your system to assure a safe and proper operation in future.

INFORMATION

Only the team of DEWETRON is allowed to perform any kinds of repairs to your system to assure a safe and proper operation in future. For information regarding service and repairs contact your local distributor first or DEWETRON directly.

INFORMATION

Any spare parts (screws, backplanes, cables etc.) must be obtained from DEWETRON only.

Certificate of conformity

Manufacturer	DEWETRON GmbH
Address	Parkring 4 8074 Grambach, Austria Tel.: +43 316 3070-0 Fax: +43 316 3070-90 Email: sales@dewetron.com http://www.dewetron.com
Name of product	**DW3-UPS-DC**
Kind of product	*UPS and battery charger*

The product meets the regulations of the following EC-directives:

2014/35/EU

Directive of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

2014/30/EU

Directive of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)

The accordance is proved by the observance of the following standards:

LVEMC	**Safety**	IEC 61010-1:2010/AMD1:2016 pol. deg. 2	
	Emissions	EN 61000-6-4	EN 55011 Class A
	Immunity	EN 61000-6-2	Group standard

Grambach, June 30, 2025

Place / date of the CE marking

Ing. Thomas Propst / Manager Total Quality