1. GENERAL DESCRIPTION

The UZK12.072 battery module utilizes one non-spillable maintenance-free VRLA lead-acid battery, which is assembled in a package with all wiring and fusing included.

The battery module is available in two different options. It can be ordered as UZK-module with a battery or as UZO-module without a battery which can be installed at a later date to avoid outdated batteries. The battery module can either be mounted on a DIN-rail or be screwed on a flat surface.

2. SHORT-FORM DATA

Nominal voltage DC 12V
Nominal battery capacity 7Ah
Nominal battery life 3 to 5 years According EUROBAT
Battery current Max. 30A
Max. 1.8A
Discharging current Max. 1.8A
Charging current
Recommended charging voltage
13.9V At 10°C
13.75V At 20°C
13.6V At 30°C
13.45V At 40°C
Self-discharge rate 3%/month At 20°C
Battery fuse 30A ATOP® 287 030 from Littelfuse
Temperature range -10°C to +40°C For charging
-15°C to +50°C For discharging
Size (WxHxD) 158x132x98mm
800g / 1.76lb For UZK12.072
Weight
800g / 1.76lb For UZO12.072

3. ORDER NUMBERS

Battery Module
UZK12.072 Battery module with assembled batteries
UZO12.072 Battery module without assembled batteries
UZB12.071 Battery replacement 12V, 7Ah

4. MARKINGS

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All parameters are typical values specified at, 25°C ambient temperature unless otherwise noted.
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The information given in this document is correct to the best of our knowledge and experience at the time of publication. If not expressly agreed otherwise, this information does not represent a warranty in the legal sense of the word. As the state of our knowledge and experience is constantly changing, the information in this data sheet is subject to revision. We therefore kindly ask you to always use the latest issue of this document (available under www.pulspower.com).

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**WARNING** Risk of electrical shock, fire, personal injury or death.
- Turn power off before working on the device. Protect against inadvertent re-powering.
- Do not modify or repair the unit.
- Use caution to prevent any foreign objects from entering the housing.
- Do not use in wet locations or in areas where moisture or condensation can be expected.
- Do not touch during power-on, and immediately after power-off. Hot surfaces may cause burns.
5. INTENDED USE

This module is designed for installation in an enclosure and is intended for the general professional use such as in industrial control, office, communication, and instrumentation equipment.
Do not use this module in equipment, where malfunction may cause severe personal injury or threaten human life.

6. INSTRUCTIONS FOR DISPOSAL OF THE BATTERIES

Batteries must be completely discharged before replacement and can be returned to the supplier of the battery module or the battery manufacturer for disposal.
Always dispose batteries through a recycling organization.

7. INSTRUCTIONS FOR BATTERY STORAGE

Do not store batteries or battery modules at temperatures higher than 25°C or performance and lifetime may change.
Do not store discharged batteries. Keep batteries fully charged!
Charge retention is important to get the longest battery life. Stored batteries which are not fully charged age faster then charged batteries.
Do not store batteries longer than 9 months without charging or performance and lifetime may change. Every 9 months or whenever the open circuit voltage (OCV) falls below 12.6V, the battery module should be charged. Apply a charging voltage of 13.8V (at 25°C) for 72 hours. Batteries with an OCV below 12V must not be charged anymore and must be disposed.

8. INSTALLATION INSTRUCTIONS

This device may only be installed and put into operation by qualified personnel.
Before initial use, check the last charging which is marked on the battery. If it is older than 9 month, replace the battery.
Do not install the battery fuse until the installation work is complete.
This device does not contain serviceable parts, except the fuse or replacement battery. If malfunction should occur during installation or operation, first check the fuse and battery for proper functionality. If the unit is damaged or if the malfunction continues, immediately turn power off and send device to the factory for inspection.
Replacement fuses must be of the same type or an UL listed fuse with the same nominal value and characteristics.
Do not short-circuit the battery poles or power wires and always check correct battery polarity.
Mount the device onto a heavy duty DIN-rail or screw it securely on a flat surface. Before mounting the unit on a flat surface, detach the DIN-rail slider (remove the plastic lock mechanism by using a flat-blade screwdriver and move the lock downwards while pushing the plastic slide upwards at the same time) and the two aluminum DIN-rail brackets (Torx T10 screwdriver).
Do not install the battery module upside down.

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All parameters are typical values specified at, 25°C ambient temperature unless otherwise noted.
Place the battery module in a cool area inside a cabinet.
Shorten the (+) and (-) wires as needed for the DC-UPS between the battery module and the DC-UPS. If separate wires are used, do not use wires smaller than 4mm² (12 AWG).
Install the device in an enclosure providing protection against electrical, mechanical and fire hazards. Ensure sufficient ventilation by following the requirements of the EN 50272-2.
CAUTION: The unit contains wet cell batteries. Ventilation of the installation room in accordance with the rules of Canadian Electrical Code, part 1 is required if used in Canada.
The battery module is for use in a controlled environment. Do not use the device in pollution degree 3 areas without additional protection or in applications where a degree of protection better than IP00 is required.
Do not use batteries other than the original batteries supplied by the manufacturer to avoid conflicts with agency approvals.
The maximum surrounding air temperature is +50°C / +122°F. The operational temperature is the same as the ambient or surrounding air temperature and is defined as the air temperature 2cm below the device.

9. HAZARDOUS LOCATION INSTALLATION INSTRUCTIONS

The device is suitable for use in Class I Division 2 Groups A, B, C, D locations and for use in Group II Category 3 (Zone 2) environments.
ATEX Certificate: EPS 15 ATEX 1 025 X
ATEX Classification: II 3G EX ec IIC T4 Gc

WARNING EXPLOSION HAZARDS!
Substitution of components may impair suitability for this environment. Do not disconnect the device unless power has been switched off or the area is known to be non-hazardous.
A suitable enclosure must be provided for the end product which has a minimum protection of IP23 and fulfils the requirements of the EN 60079-15. Sufficient ventilation must be ensured in the final installation.
Do not use batteries other than the original batteries supplied by the manufacturer or batteries, which are approved according to EN/ IEC 60079-7.

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10. INSTRUCTIONS FOR REPLACING BATTERIES

Batteries need to be replaced periodically. The time interval depends on the ambient temperature in which the battery is used and on the number and depth of discharge cycles. In a typical application it is recommended to replace the batteries at least every 2 years.
Disconnect battery fuse before replacing the battery.
Regarding disposal of used batteries see chapter 6.

11. ENVIRONMENT

Operational temperature *) -10°C to +40°C (14°F to 104°F) For charging
Frequently charging below +5°C (41°F) reduced the lifetime of the battery
-15°C to +50°C (5°F to 122°F) For discharging
Storage temperature -20°C to +50°C (-4°F to 122°F) For storage and transportation
Recommendation: Do not store at temperatures higher than 25°C or performance and lifetime may change.
Humidity 5 to 95% r.h. IEC 60068-2-30
Do not energize while condensation is present
Vibration sinusoidal ±4mm at 16.7Hz fixed frequency for 1hour Vibration in vertical mounting orientation
according to IEC/EN 61056-1
Shock free fall from 20cm onto a wooden floor Shock with bottom down orientation
according to IEC/EN 61056-1
Altitude 0 to 6000m (0 to 20 000ft) According to IEC 62477-1, not conductive
Degree of pollution 2 LABS compatibility The unit does not release any silicone or other LABS-critical substances and is suitable for use in paint shops.
Corrosive gases ISA-71.04-1985, Severity Level G3
*) Operational temperature is the same as the ambient temperature and is defined as the air temperature 2cm below the unit.

12. PROTECTION FEATURES

Degree of protection IP 00 According to EN/IEC 60529
Class of protection III According to EN/IEC 61140
Internal input fuse 30A DC-Fuse (blade type) ATOF® 287 030 from Littelfuse
Replacement fuses must be of the same type or an UL listed fuse with the same nominal value and characteristics.
Isolation 1100Vac Isolation voltage between power to chassis

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### 13. APPROVALS

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<th>Description</th>
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<tr>
<td>EC Declaration of Conformity</td>
<td>The CE mark indicates conformance with the - EMC directive and the - ATEX directive</td>
</tr>
<tr>
<td>UL 508</td>
<td>Listed for use as Industrial Control Equipment; U.S.A. (UL 508) and Canada (C22.2 No. 107-1-01); E-File: E198865</td>
</tr>
<tr>
<td>EN 60079-0, EN 60079-7 ATEX</td>
<td>Approval for use in hazardous locations Zone 2 Category 3G. Number of ATEX certificate: EPS 15 ATEX 1 025 X The battery module must be built-in in an IP23 enclosure.</td>
</tr>
<tr>
<td>IEC 60079-0, IEC 60079-7 IECEX</td>
<td>Suitable for use in Class 1 Zone 2 Groups Ila, Iib and Iic locations. Number of IECEx certificate: IECEx EPS 15.0049X</td>
</tr>
<tr>
<td>Marine</td>
<td>GL (Germanischer Lloyd) classified Environmental category: A Marine and offshore applications</td>
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<tr>
<td>EAC TR Registration</td>
<td>Registration for the Eurasian Customs Union market (Russia, Kazakhstan, Belarus)</td>
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### 14. OTHER FULFILLED STANDARDS

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<th>Directive</th>
<th>Description</th>
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<thead>
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<th>Width</th>
<th>Height</th>
<th>Depth</th>
<th>Weight</th>
<th>Bracket material</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>158mm</td>
<td>132mm</td>
<td>98mm</td>
<td>3500g</td>
<td>Zinc-plated steel</td>
</tr>
<tr>
<td></td>
<td>/ 6.22''</td>
<td>/ 5.2''</td>
<td>/ 3.86''</td>
<td>/ 7.7lb</td>
<td></td>
</tr>
<tr>
<td>For DIN-Rail mounting; The DIN-rail height must be added to the unit depth to calculate the total required installation depth.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800g</td>
<td>/ 1.76lb</td>
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<tr>
<td>For UZO12.072</td>
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</table>

Fig. 15-1  Front view

Fig. 15-2  Side view

Fig. 15-3  Isometric view

All dimensions in mm
16. WALL/ PANEL MOUNTING

Panel/ wall mounting is possible by detaching the DIN-Rail brackets

Fig. 16-1  Panel/ wall mounting – Removing the aluminium brackets and plastic slide

Detach the two aluminum brackets by removing the two screws with a Torx screwdriver (Torx 10).

Remove the plastic lock mechanism by using a flat-blade screwdriver to move the lock downwards while pushing the plastic slide upwards at the same time. Detach the plastic slide.

Panel/ wall mounting is possible by using either the four holes on the rear or on the bottom of the unit.

Fig. 16-2  Hole pattern for wall mount

Fig. 16-3  Hole pattern for bottom mount

All dimensions in mm
17. RECOMMENDATIONS FOR A LONG BATTERY LIFE

Temperature:
The temperature has the most impact on the service life. The hotter the temperature, the earlier the wear-out phase of the battery begins. The wear-out results in a degradation of battery capacity. Place the battery module in a cool location, e.g. near the bottom of the control cabinet. Do not place the battery module near heat generating devices. Do not overcharge batteries!

![Service life (according to EUROBAT) vs. ambient temperature, typ.](image)

Number of discharge cycles and depth of discharge:
Do not discharge batteries more than necessary. Set buffer time limiter to the required buffer time. The number, as well as the depth of discharging cycles is limited. A replacement of the battery might be necessary earlier. When choosing the battery capacity, always try to get the next higher capacity than required. The depth of discharge reduces the service life of the battery and limits the number of cycles.

![Battery degradation vs. discharging cycles, typ.](image)

Store batteries fully charged
Do not store discharged batteries. Keep batteries fully charged!
Charge retention is important to get the longest battery life. Stored batteries which are not fully charged age faster then charged batteries. Batteries which are not in use should be recharged at least once a year. The higher the ambient temperature, the shorter the charging interval. At storage temperatures higher than 30°C, recharging should be done at least every nine months.
18. MOUNTING ORIENTATIONS

The standard mounting orientation is the vertical installation onto a flat surface.

Fig. 18-1 Standard mounting orientation

The following mounting orientations are also allowed:

Fig. 18-2 Allowed mounting orientations

Do not use the battery module in an upside down position:

Fig. 18-3 Forbidden mounting orientation

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