

# AmsBattery



Data Sheet

## Description

The AmsBattery module is a client module in the Amplex Module System. It is a backup/UPS module which is used for supplying other modules with emergency power in the event of power failure.

All modules in the Amplex Module System incorporate an A-Bus interface which is based on the industrially proven RS-485 technology. The A-Bus interface is used for power supply and for direct communication between the modules.

If the AmsBattery module is installed together with, e.g. an AmsCPU module, it will be recharged with power as long as the battery is supplied with 12 V from the A-Bus interface. If the main power fails, AmsBattery will instantaneously take over the power supply of the A-Bus. This enables the AmsCPU module to store data and send a main power failure alarm to the central server via GPRS/SMS before it shuts down safely.

## Functionality

| Topic            | Comments   |
|------------------|--|
| Communication    | A-Bus two-way communication with A-Bus masters, e.g. AmsCPU, AmsService  |
| Battery charging | Battery charging is performed from 22 p.m. to 6 a.m. (UTC), if required. The temperature in this time period must be between 0°C to +40°C.   |
| Autodiscovery    | The module is automatically discovered by the AmsCPU. In case a module is disconnected from the AmsCPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the AmsCPU or another AmsCPU, it will be rediscovered by the system. |
| Real-time clock  | The real-time clock is automatically synchronized with the AmsCPU, which in turn is synchronized with the Network Time Protocol (NTP).   |
| LEDs             | AMS Status LED (green): indicates whether the A-Bus is up and running. Battery LED (red): indicates whether the AmsBattery module is charging or supplying the AmsCPU with backup power in the event of power failure.   |

## Connections

| I/O     | Comments   |
|---------|--|
| A-Bus   | A-Bus client module  |
| Battery | Initial capacity of 900 mAh (7.4 V). Li-Polymer rechargeable, incl. safety circuit |

## Reliability & Maintainability

| Topic                        | Comments  |
|------------------------------|---|
| Software upgrade             | The software on the AmsBattery module can be updated remotely from the central server.  |
| Installation of new software | New software is transferred without interrupting the normal functionality of the AmsBattery module. When the software has been transferred, the integrity of the software is checked and the software is installed. |
| Self-test                    | A built-in self-test (BIST) is performed after power-up.  |
| Watchdog and brown-out reset | Watchdog and brown-out reset ensure that the system is up and running at all times.   |



## Technical Specifications

### Operational specifications

|                     |                      |
|---------------------|----------------------|
| Storage temp.       | -20°C to +70°C       |
| Operating temp.     |                      |
| Charging mode       | 0°C to +40°C         |
| Discharging mode    | -20°C to +55°C       |
| Max humidity        | 90% (non-condensing) |
| IP grade            | IP20                 |
| Input voltage       | 12 V DC via A-Bus    |
| Current consumption |                      |
| Typical             | 20 mA                |
| Max                 | 55 mA                |
| Battery charging    | 160 mA               |
| Output current      | Max 300 mA           |

### Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)  
 2004/108/EC, EMC Directive  
 2002/95/EC, RoHS Directive



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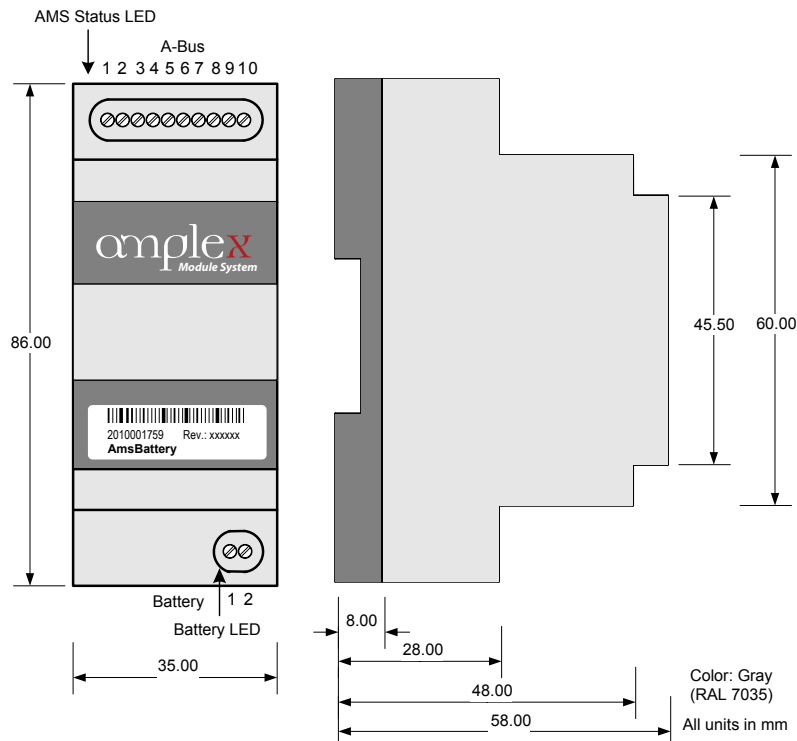
## Installation Guide

The AmsBattery module can be connected to any master module in the Amplex Module System, e.g. AmsCPU. The A-Bus connections are internally daisy-chained for easy installation.

| Topic                         | Comments  |
|-------------------------------|---|
| A-Bus cable                   | Use shielded twisted pair cable   |
| A-Bus cable length            | < 3 m   |
| 0.5 mm <sup>2</sup> terminals | Use a 2 mm slotted screwdriver to loosen/tighten the terminal screws.   |
| Battery turn on               | To minimize self-discharge the module is delivered with the battery disconnected. To enable the battery, terminal 1 and 2 of the Battery connector must be connected to each other. |
| Enclosure                     | The AmsBattery module must be installed in an enclosure of protection degree IP65 or installed at a location that provides the module with the same level of protection.            |

CAUTION: BATTERY IS NOT REPLACEABLE. RISK OF EXPLOSION IF THE BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSAL OF USED BATTERIES MUST BE IN ACCORDANCE WITH LOCAL ENVIRONMENTAL REGULATIONS.

## Drawing

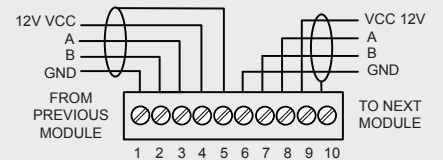


## Physical Specifications

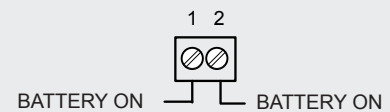
|                   |  |
|-------------------|--|
| Weight            | 90 g                                   |
| Top part          | Gray (RAL 7035)                        |
|                   | Lexan 940                              |
| Base part         | Black (RAL 7021)                       |
|                   | Noryl VO 1550                          |
| Coating           | Conformal coated                       |
| A-Bus connector   | 0.14 - 0.5 mm <sup>2</sup> (AWG 26-20) |
| Battery connector | 0.14 - 0.5 mm <sup>2</sup> (AWG 26-20) |
| Mounting          | DIN-rail (EN50022)                     |

## I/O Schematic

### A-Bus connection

Terminals: 0.5 mm<sup>2</sup>

### Battery connection

Terminals: 0.5 mm<sup>2</sup>

## Ordering Information

| Product    | Order number |
|------------|--------------|
| AmsBattery | 100-20-006   |

All specifications are subject to changes

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