

Protect your business from costly downtime!

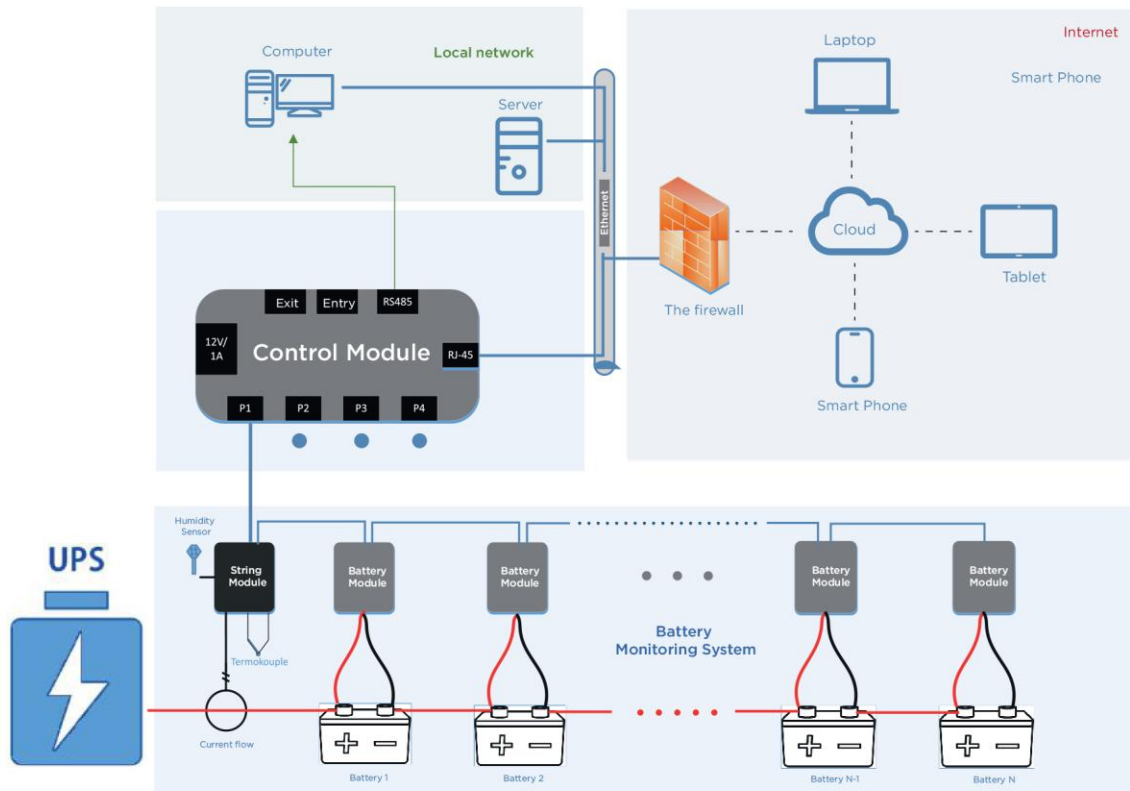
ALPAIS battery management system provides
real time 7/24 & 365 days a year monitoring.



alpais
battery monitoring system

Alpais: Modular Battery Monitoring System

Located at the center of the Alpais system, the Control Unit offers a complete solution for monitoring unlimited number of batteries with its integrated hardware and software. While Alpais provides maximum usage of backup power infrastructure generated by batteries, ensures businesses make the most of the investment made for the batteries.



> System Components



> Measurement of Battery parameters using Battery Monitoring Module

Voltage, internal resistance and temperature parameters of VRLA, VLA, or Ni-Cd type batteries are measured and measured parameters are transmitted to the Control Unit via Modbus protocol.



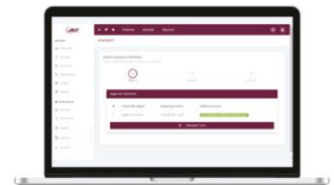
> Measurement of current and environment parameters using String Module

String current and ambient temperature and humidity ratio are measured, and measured parameters are transmitted to the Control Unit via Modbus protocol.



> Control Module

Control unit is located at the centre of the system and responsible for saving and processing the parameters transmitted from batteries and string units.



> Battery monitoring system software

Unlimited number of batteries installed either in a single room or different facilities or countries are monitored extensively from a single control center.

Alpais Battery Monitoring Software

Located at the center of the Alpais system, the Control Unit offers a complete solution for monitoring unlimited number of batteries with its integrated hardware and software. Alpais provides you with the maximum availability of your backup power infrastructure generated by the batteries, allowing you to have the best benefit, you have made investment for the battery

> Alpais offers proactive protection by making the right decisions on the data it provides.

- Local Area Network or Cloud Monitoring
- Multiple Location control from single control center
- Modbus RTU Support
- String Based Battery Positioning
- Real-Time Battery Status and Color Notification
- Detailed Charge / Discharge Record
- Alarm and Event Activities
- E-mail and SMS Notifications
- Management and service based reporting
- Automatic Data Management
- PDF or Excel Reporting
- Graphics and Analysis Tools
- Facility and Project Customization
- Alarm history and service logs





> What does ALPAIS measure ?



Battery Voltage

The float charge voltage has critical significance for battery life. Charge voltages that are not applied correctly cause loss of capacity, accelerated corrosion in the network, excessive gas release, and eventually reduces the battery life. Battery voltage monitoring provides detection of short circuits, discharge performance and fatal failures in the UPS battery backup systems in advance.



Battery Internal Resistance

Internal resistance is an increasing factor with battery age. Due to the rise in internal resistance, the battery is unable to deliver the desired current. Thus, the service life of the batteries can be determined exactly by monitoring the internal resistance value. Internal resistance measurements also provide detection of weak connections and open circuit batteries before fault occurs. In some cases battery failures take place in a very short period of time such as a week. For this reason daily internal resistance measurements allows you to detect faulty batteries before a problem occurs without the need for a discharge test



Battery Temperature

The most important advantage of measuring the temperature of each battery is identifying thermal runaway before occurring, and taking necessary intervention. Moreover, data about weak HVAC originated environment problems, weak connections and excessive ripple voltages can be collected, indirectly.



String Voltage

The String voltage is monitored to verify that the charging system is active and charging as required.



String Current

By monitoring the string current, the amount of energy received or given for each string can be measured. An ordinary UPS only measures string current and does not detect imbalances between the strings. The imbalances between the strings are the warnings about the voltage problems in the system. String current monitoring also allows detection of the incorrect charging method and the ground fault that will adversely affect the system.



Ambient Temperature

The recommended usage temperature of batteries varies between 20-25 °C. Temperatures outside this range can significantly affect the battery corrosion rate and shorten battery life. Approximately 8-10 °C increase in ambient temperature can cause the battery life to decrease by 40-50%. Therefore, it is monitored whether the ambient temperature in the battery rooms is within the recommended range and the useful feedback is provided to the user.

End of Costly Downtime

If you are talking about the battery infrastructure installed somewhere, it can be predicted easily that a critical task has been carried out there. When the battery infrastructure is required and if this need cannot be met at that time, the increase in costs will be inevitable.

Power blackouts is a common situation in the world. If power blackouts is taken into account, the investments made for UPS and Battery Monitoring Systems are vital for your business.

You can be ready for any negative situation by monitoring the installed battery infrastructure for backup power.

The Alpais Battery Monitoring System, always refreshes your sense of trust by providing daily feedback and information from battery infrastructure.



> Alpais, Adds Value to Your Business, Protects Your Investment!

- Extends the lifetime of the batteries in the infrastructure.
- Reduce Maintenance and replacement costs through effective Protective and Preventive Maintenance.
- Provides maximum benefit with minimum workforce.
- Provides remote access, giving you the opportunity to manage your business anytime, anywhere.
- Provides planned battery procurement by avoiding emergency situations.
- Enables the identification and verification of the warranty status with recorded data and reporting.
- Provides improvements in business insurance premiums as risks are reduced to minimum.
- Keeping your staff away from battery racks / chambers and vulnerable areas makes sure their safety and activities continue without interruption. This allows you to focus on your core activities by simplifying your work safety and health planning.

> Order Information

SYSTEM STRUCTURE		EXPLANATION	PRODUCT CODE
CONTROL MODULE		Control Module Control Module - with Hydrogen Sensor	CONMOD CONMOD-H
STRING MODULE		String Module String Module - with Temperature and Humidity Sensor	STRMOD STRMOD-ENV
BATTERY MODULE		2V Battery Module (optional Transparent Case) 6V Battery Module (optional Transparent Case) 12V Battery Module (optional Transparent Case)	BATMOD02 (BATMOD02-T) BATMOD06 (BATMOD06-T) BATMOD12 (BATMOD12-T)
ACCESSORY	DATA CABLE	Cable Terminal: RJ11 Input, L:40 cm Cable Terminal: RJ11 Input, L:70 cm	COMCAB-40 COMCAB-70
	BATTERY MEASUREMENT CABLE	Cable Terminal: U Type, r: X mm L: 30 cm Cable Terminal: O Type, r: X mm L: 30 cm Cable Terminal: Faston Type, , mm L: 30 cm	MEACAB-U-X-30 MEACAB-O-X-30 MEACAB-F-30
	CURRENT SENSOR	Rated Input: 50 A (Measure Range: ~0±100A) Rated Input: 100 A (Measure Range: ~0±200A) Rated Input: 200 A (Measure Range: ~0±400A) Rated Input: 400 A (Measure Range: ~0±800A) Rated Input: 500 A (Measure Range: ~0±1000A)	CS050 CS100 CS200 CS400 CS500
	POWER SUPPLY	12V DC Power Supply	PA-12-2
CONTROL MODULE CABINET SOLUTION		Dimensions: 300x600x165 mm (for 1 Control Module) Dimensions: 500x600x165 mm (for 2 Control Module)	PTC-1 PTC-2

Note: Our solutions vary according to user demand. The standard dimensions and product dimensions can be changed according to the requirements of the project if technically appropriate.



How Battery Monitoring System works?

With the Alpais battery monitoring system, a battery module is installed in each battery. The battery module measures the voltage, temperature and internal resistance of each battery. Charge and discharge status, string current and string voltage are measured by each string module placed on each string. Ambient humidity and temperature are also measured by the sensors in these string modules. The control module collects and records the data received through the communication links between them. Afterwards, the data is transmitted to the user with the Alpais software to show the battery status as well as time-axis or column graphs. Notifications of critical and alert batteries are sent by e-mail and SMS and displayed via the interface. In this way, critical batteries are detected and necessary actions or planned battery changes can be made according to the data received.



I have a periodic maintenance agreement with my UPS or battery service provider. Why should I need a Battery Monitoring System?

Your periodic maintenance cannot keep you as safe and secure as you think. Batteries and management of batteries are shown as the cause of nearly 85% of interruptions connected to the uninterruptible power supply. Periodic maintenance has become a traditional method as a result of time. However, there are still interruptions in critical area applications, and these have considerable costs to business owners. Therefore, protecting your backup power system with only periodical maintenance will not reduce the 85% failure rate caused by the battery and will not reduce your risks sufficiently. Batteries, which are unpredictable by nature, can suddenly break down within 2 weeks and cause your system to crash.



I already have a monitoring system in the UPS or Rectifier. Is the Battery Monitoring System necessary for my operation?

All monitoring systems are the same. Monitoring systems in UPS or Rectifiers monitor batteries as a group and provide only string based monitoring. It monitors at the battery pack as whole, as a block. They usually monitor the group's voltage and charge / discharge states, which cannot provide adequate protection. However, each battery in the battery group has a separate importance; if even one battery in the group fails, the system will not operate or if one battery is unhealthy, this will affect the whole group. In other words, since the monitoring systems in the UPS or Reducer are not able to inspect each battery individually, your system is still at great risk, even when everything seems ok. Whenever you need to ensure that your system will work properly, it is essential to use a system that can monitors each battery separately, examine parameters that may affect its health, and allow you to perform scheduled battery replacement.



Instead of installing a Battery Monitoring System, I can reserve some more resources and replace all my batteries. Should I still use a Battery Monitoring System?

The backup power system responsible makes this mistake. Installing a new battery system does not eliminate the risk of battery failure. Risks cannot be reduced to zero in any unmonitored component. The possibility of fabricated problems and the effect of this situation on the total life of the system and the fact that some batteries can be completed by the end of the warranty period (approximately 3%) are among the risk factors that cannot be ignored. Even if your batteries are newly purchased, unexpected situations may occur and even your new system that has been relied upon can interrupt your business and cause financial losses. Thanks to the measurements and reports provided by the battery monitoring system, it is possible to identify production-related problems and to submit reports for warranty evaluation.



Installing the Battery Monitoring System is a cost for my business. Will it benefit financially?

Contrary to popular belief, the battery monitoring system has many financial benefits. Reduces routine visits or maintenance to battery rooms and reduces the amount of work done, saving you money. It may reduce the frequency of discharge tests that wear batteries; you save time, life of your batteries and cost. Because you can monitor the status of your batteries instantly and be aware of the alarms and warning situations as soon as possible; so you can prevent situations that reduce the life of your batteries individually by detecting and replacing an unhealthy battery and reducing the life of the entire system. Thus, the life of your battery system is extended, its continuity is ensured and replacement of the whole battery group is postponed. Even with this situation, the battery monitoring system is a self-paying system.

> Technical specifications

Control Module	
Operating Conditions	
Operating Temperature	0-50°C (32-122°F)
Storage Temperature	-10-80°C (14-176°F)
Relative Humidity Ratio	%5-%90 RH
Atmospheric Pressure	80-110kPa
Power Input	12Vdc @2A
Max. Power Consumption	20 Watt
Communication Interface	
RS-485	Modbus RTU
Ethernet	SNMP
Features	
Number of String	4 Strings can be monitored
Number of String Unit	1 String Unit at each String
Number of Battery Monitoring Unit	120 Battery Monitoring Unit at each
Supported Batteries	Between 1,2 V and 12 V
String Voltage	1,2 V-800Vdc
I/O	
Relay Output	2x Dry Contact Output, 30 VDC @ 5A
Digital Input	2
Isolated Output	2
Electrical Isolation	2000V
Physical Characteristics	
Dimensions (H x W x D)	(190 x 150 x 46mm)
Enclosure	Metal
Color	Grey

String Unit	
Current Monitoring	
Current range	0-500A
Resolution	10 mA
Accuracy	1%
Current Sensor	Hall Effect
Ambient Temperature Monitoring	
Temperature Range	0-50°C (32-122°F)
Resolution	0.01°C
Accuracy	± 2 °C
Protection	
Isolation	2000V Opto İzolasyon
Short Circuit Protection	Max. 3.5A (Internal Fuse)
Reverse Polarity Protection	Provides protection at rated voltage against reverse connection
Environmental Conditions	
Operating Temperature	0-50°C (32-122°F)
Storage Temperature	-10-70°C (14-158°F)
Relative Humidity Ratio	%5-%90 RH
Atmospheric Pressure	80-110kPa
Power	
Power Consumption	1.25 Watt
Operating Current	
Quiescent current	150 mA
Communication	
Data Transmission Interface	Serial Modbus protocol
Features	
Auto Addressing	Automatically obtain address during installation or replacement
Physical Characteristics	
Dimensions (H x W x D)	(90.5 x 62.5 x 26.5 mm)
Enclosure	Flame retardant ABS
Color	Transparent or Black

Battery Module	
Compatibility	
Battery Type	Ni - Cd , VLA , VRLA
Battery Voltage Monitoring	
Voltage Range	0-16V
Resolution	2 mV
Accuracy	0.1% ±5 mV
Internal Resistance Monitoring	
Resistance Range	0.05-64m ohms
Resolution	1 µOhm
Accuracy	±2 %
Temperature Monitoring	
Temperature Range	0-50°C (32-122°F)
Resolution	0.01°C
Accuracy	± 2 °C
Protection	
Isolation	2000V Opto Isolation
Short Circuit Protection	Max. 3.5A (Internal Fuse)
Reverse Polarity Protection	Provides protection at rated voltage against reverse connection
Operating Conditions	
Operating Temperature	0-50°C (32-122°F)
Storage Temperature	-10-70°C (14-158°F)
Relative Humidity Ratio	%5-%90 RH
Atmospheric Pressure	80-110kPa
Power	
Power Consumption	60mA @2V battery 25mA @12V battery
Operating Current	
Nominal Operaiton	25 mA -60 mA
Internal Resistance Measurement during Test	0.066A/dk
Sleep mode	<2 mA
Communication	
Data Transmission Interface	Serial Modbus protocol
Features	
Auto Addressing	Automatically obtain address during installation or replacement
Physical Characteristics	
Dimensions (H x W x D)	(90.5 x 62.5 x 26.5 mm)
Enclosure	Flame retardant ABS
Color	Transparent or Black

Protect Your Investment

Alpais Battery Monitoring System
protect your business
from costly downtime.



BIG WORKS BIG BENEFITS

About Alp Energy;

"15 years of field experience, knowledge, experience and technical expertise."

We are creating global benefit by focusing redundancy, sustainability on critical energy infrastructure with our integrated solution production capacity and with our reliable and practical solution. Our brand provides superior technology to you and your business 24 hours 7 days with our expert team. We offer productivity, simplicity and sustainability with our industrial experience, expert and solution oriented team, high quality products, services and our ability to carry out global quality business.

We make a difference with our ability to intervene immediately and with the power to provide uninterrupted energy.

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