SOLAR ENERGY SYSTEMS

KIO (Klemsan Internet Objects) Platform

KIO®

KIO HELPS YOUR GROWTH IN SOLAR ENERGY WITH PROACTIVE MONITORING

Solar, being the fastest-growing renewable energy source in the world, can be a challenge for energy companies when it comes to management. More installations mean more points to monitor and guarantee. By using KIO (Klemsan Internet Objects) in solar energy, you can simplify both monitoring and maintenance processes.

First of all, you need to connect solar panels to the utility grid and install sensors on panels to monitor their performance and provide real-time insight to site management teams. With a fully integrated system ensuring the connectivity of energy analyzers, gateways and cellular modules, KIO is designed to tell you real-time whether your solar station is delivering sufficient energy levels and maintaining load balance on the grid.

The main benefit of using KIO in solar energy is that you can see exactly what's happening in your solar station from one central control panel either through your computer or mobile devices. By connecting your devices to a cloud network and KIO's alarm management, you can identify the location of the problem and dispatch a technician to fix it before it disrupts your entire system.

Another contribution from KIO platform to energy industry firms is in the realm of predictive analytics. Since the sensors collect huge amount of data, companies can use those information streams to gain more oversight over their installations.

NO MORE EFFICIENCY LOSSES IN SOLAR POWER PLANTS THANKS TO THE INTEGRATION BETWEEN KIO PLATFORM AND BATTERY MONITORING SYSTEM!

Since solar power plants are generally distant from residential areas and batteries are not properly monitored; in case of a failure, transportation, and repair processes are unplanned and inadequate. With Battery Monitoring System offered by KLEMSAN, you can instantly measure the temperature, voltage, current and internal resistances of each battery and prevent a potential failure with the alarm you will assign.

Generally, in off-grid solar projects, the charge-discharge and current information of the batteries are read through the inverter. However, these applications provide general information about battery groups and do not contain specific information for individual batteries. Since the problem with a battery is compensated by another one, in the long run errors trigger other failures and may cause other faults due to overloads. In this case, in case of a failure in the system, where monitoring is done on battery group basis, you may encounter much bigger problems, not only a battery failure.

With Battery Monitoring System, you can detect the source of the problem in advance and take precautions, and prevent failures from triggering and propagating larger ones.

Since the communication between Central Unit and the modules, where DAM and IDAM batteries (charge / discharge and current-voltage) are read, is wireless, it is very convenient and practical for both operation and installation.
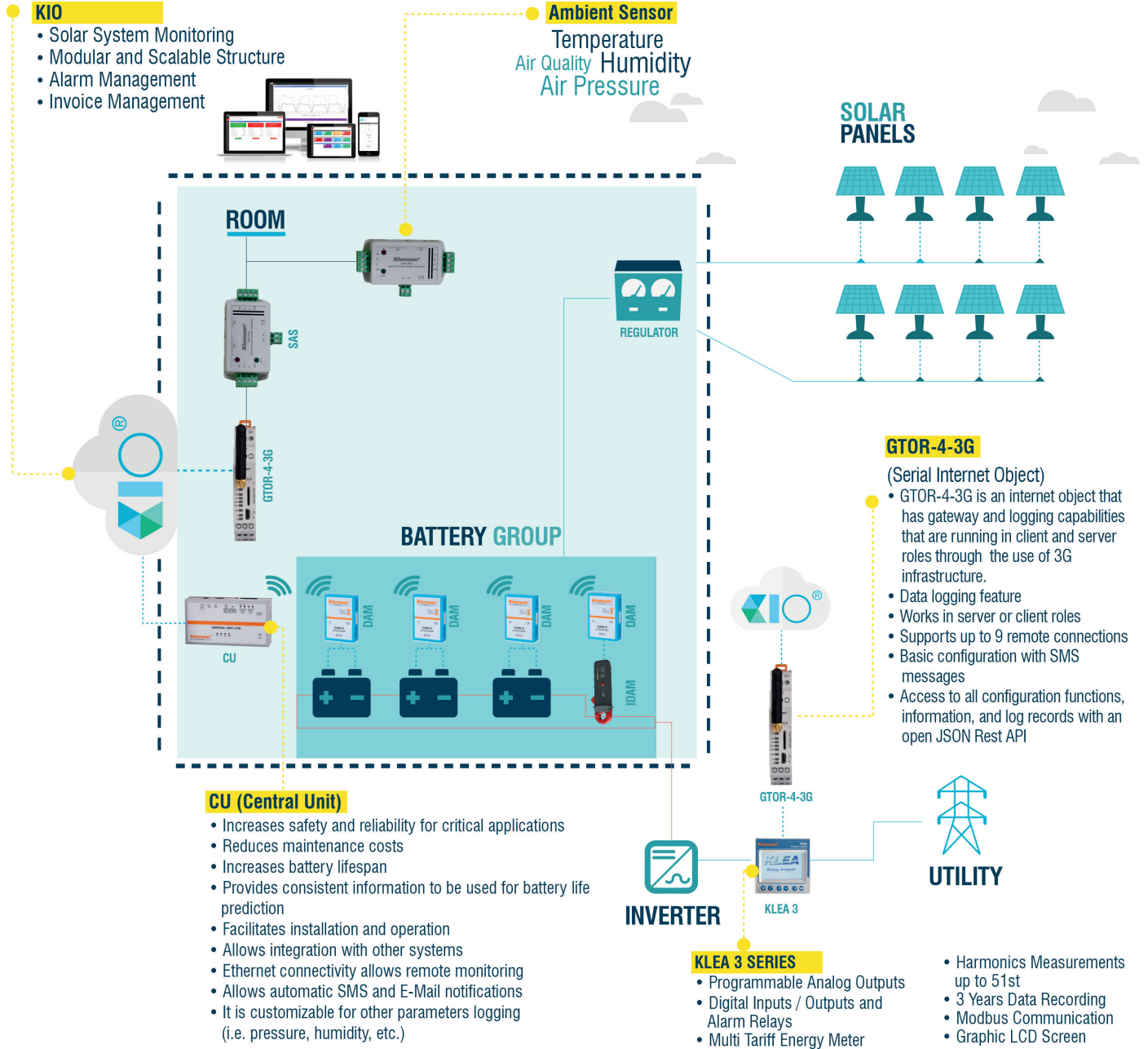
By transferring the information to KIO, the system is centralized and the status of the batteries is notified to the relevant users. Since this tracking is web-based, users can access it via their mobile devices.

CU (Central Unit): Collects and stores the DAM & IDAM data and directs them to KIO platform , manages the communication with the PC and sends SMS/E-Mail notifications.

DAM (Data Acquisition Module): Measures the voltage, temperature and internal resistance of the battery and stores the most significant data until the next reading by the CU. All data are time stamped.

IDAM (Current Acquisition Module): Measures the current of a battery or a string of batteries, in conjunction with a Hall effect current clamp (factory provided). It stores the most significant data until the next reading by the CU. All data are time stamped.

KIO®

KIO
- Solar System Monitoring
- Modular and Scalable Structure
- Alarm Management
- Invoice Management

Ambient Sensor
Temperature
Air Quality Humidity
Air Pressure

SOLAR PANELS

ROOM

SAS

GTOR-4-3G

REGULATOR

BATTERY GROUP

DAM DAM DAM DAM

IDAM

CU

GTOR-4-3G
(Serial Internet Object)
- GTOR-4-3G is an internet object that has gateway and logging capabilities that are running in client and server roles through the use of 3G infrastructure.
- Data logging feature
- Works in server or client roles
- Supports up to 9 remote connections
- Basic configuration with SMS messages
- Access to all configuration functions, information, and log records with an open JSON Rest API

GTOR-4-3G

CU (Central Unit)
- Increases safety and reliability for critical applications
- Reduces maintenance costs
- Increases battery lifespan
- Provides consistent information to be used for battery life prediction
- Facilitates installation and operation
- Allows integration with other systems
- Ethernet connectivity allows remote monitoring
- Allows automatic SMS and E-Mail notifications
- It is customizable for other parameters logging (i.e. pressure, humidity, etc.)

INVERTER

KLEA 3

UTILITY

KLEA 3 SERIES
- Programmable Analog Outputs
- Digital Inputs / Outputs and Alarm Relays
- Multi Tariff Energy Meter

- Harmonics Measurements up to 51st
- 3 Years Data Recording
- Modbus Communication
- Graphic LCD Screen

Visit our website for detailed info !

Klemsan®