

AkshyaPower

Wired and Wireless String Monitoring Solutions

Retrofit String Monitoring Solution

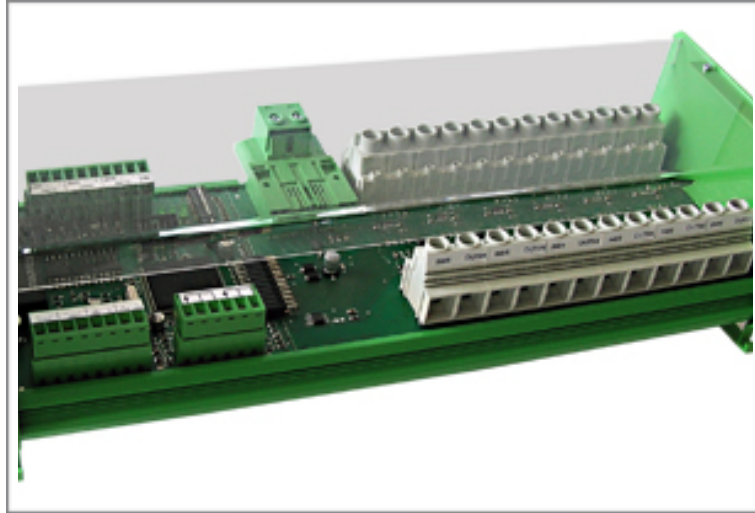
The retrofit string monitoring solution from AkshyaPower includes 3 major parts and combinedly it can be integrating into an existing AJB box without any modifications. Following are the 3 major parts of the solution -

- A PLC board which is integrated at the existing AJB box, that converts the string current into communication signals and sends it to the datalogger
- Datalogger which collects data from the string monitoring box and sends it to the cloud via wireless or GSM network interface
- Web based application for live string monitoring and alerting interface

Following is the details of the each part of the solution -

1. PLC for Photovoltaic plants control and supervision - STI2 1225 by Kernel Group

The string control STI2 1225 with isolated current reading channel is typically used for monitoring photovoltaic plants without string controls or in case of revamping of the plant. The isolated current reading permit to add the STI2 controls without remake the existing PV parallel box.



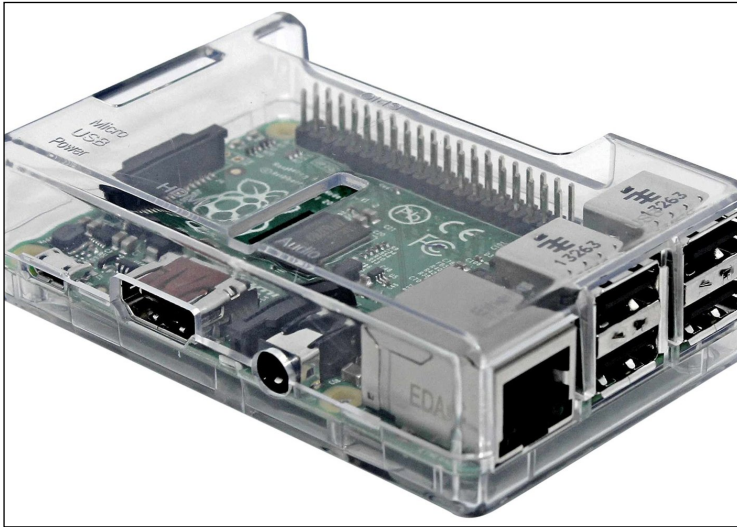
Usually in a PV plants each string is composed of 15-25 photovoltaic panels with the positive connected together. In the existing plants it is not useful use string controls which provide the parallelization negative poles, then the negative pole of each string is carried in the input string control STI2 1225, read and returned in output. In this way, with a simple change to the strings connections, it is possible put the control STI2 1225 and add the current and voltage monitoring on existing systems but without replace completely the PV plant box already assembled.

The data collected by the STI2 1225 string monitoring can be read by a supervising PC or data processing device via Modbus RTU. All products of the Kernel STI2 series are tropicalized with high resistance insulating paint to support extreme environmental changes in temperature and in humidity.

A variation of this solution in wireless is also available with a slave to slave range upto 250 meters. Technical details of the wireless interface will be shared soon.

2. easyLog datalogger for logging and cloud monitoring

One datalogger is installed at each inverter room, which connects with 8-10 SMB boxes via wireless or wired interface.



The easyLog datalogger from AkshyaPower comes in 3 different system size: easyLog 16GB, easyLog 32GB or easyLog 64GB. The data logger records the data from SMB and stores them centrally. The values from the easyLog are transferred directly to the AkshyaPower servers via a communication interface. AkshyaPower Cloud offers a range of graphical evaluation options and a precise monitoring system for Technical Operation Management. The data logger also features an interface to download the historical data.

easyLog is a powerful monitoring system that is compatible with many devices including SMB, meters, inverters, weather stations and the monitoring portal AkshyaPower. All devices are connected by Ethernet input. Different communication variants are available for sending the measured data via the Internet. When malfunctions are detected in the system, an alert is sent immediately by e-mail, SMS.

easyLog Features

- 15 Minute Level recording of all system data
- Data transfer to the AkshyaPower Cloud for monitoring and evaluation
- Expansion with additional measuring modules possible
- GPRS/GSM modem available for all devices
- Communication via various interfaces

- Compatible with meters and inverters from all leading manufacturers
- Offline Storage in case of communication failure

easyLog Technical Specifications

- Supply voltage: 85 ... 240 V AC; 5 V DC
- Analog Inputs: 17 GPIO Pins
- Current consumption: max. 800 mA(4.0 W)
- Operating temperature: 0 ... 55 °C
- Dimensions (H x W x D):85.60 mm × 56.5 mm (3.370 in × 2.224 in)
- Installation: Top-hat rail, wall installation
- Communication:
 - Ethernet (100 MBit)
 - 802.11n Wireless LAN
 - Bluetooth 4.1
 - Bluetooth Low Energy (BLE)

3. Web based String Monitoring Interface

A web based system is provided for site level string monitoring as well as cloud based string monitoring. Following are the features of the monitoring solution -

- Realtime string monitoring interface
- Daily and Historical data visual and textual display
- Export data in Excel and CSV format
- Instant alerts via email and SMS
- Scheduled daily SMS and Email reports in specified formats
- Secure cloud and hourly data backup
- HTTPS support
- REST API for intergration with other systems