MelRok ESP Touch™

Energy Challenge

Increasing energy costs are a challenge around the world. Understanding and managing the various energy programs and billing methods continues to become more and more complex. At the same time, facility managers are tasked with finding means to reduce energy costs year over year to maintain profitability.

Utilities are faced with an increase in demand from their customers. Traditional reliable energy generation is being replaced with unreliable and unpredictable alternative clean energy generation.

The Solution: ESP Touch™

The ESP Touch is an Internet-of-Things (IoT) device that combines the functionality of a Gateway, Data Logger, On-Site Server, Demand Management Controller, and ADR DRAS Client all in one. It collects and streams data from existing EMS, BMS, SCADA, utility meters and energy meters to the MelRok Cloud for storage, analytics, visualization and reporting. Once on the cloud, the data is accessible by energy managers and authorized service providers via automated and secure API.

Variety of communication protocols:

The ESP Touch provides a very flexible solution for connecting your energy data to the cloud. The ESP Touch can communicate over multiple protocols: BACnet/IP, Modbus TCP, SNMP, BACnet RTU, Modbus RTU, KYZ Pulse, ZigBee, and many other published protocols.

No longer are energy meters stranded due to incompatibility – you can now connect a variety of meters and view all of that data in the EnergiStream user-interface.

DRAS Server and Demand Management Controller:

The ESP Touch is also a Demand Response Automated Server (DRAS) client for implementation of Automated Demand Response (ADR) actions using OpenADR 1.0 and 2.0b. The ESP Touch can implement manual (DR) or ADR actions across a nationwide portfolio of facilities with a 1-minute response time. The same embedded control mechanisms can be implemented for actions to manage manual Demand Management or automated Demand Management.

ESP Touch Key Features and Benefits

- Supports simultaneous data acquisition from up to 122 metering devices (power, water, gas, flow, environmental, etc.)
  - Up to 20 metering devices with RS-485 serial communication (Modbus RTU, BACnet RTU, or other published serial protocol)
  - Up to 100 IP-Based metering devices (Modbus TCP, BACnet/IP, SNMP, or other published IP-based protocol)
  - One KYZ Pulse Output energy meter
  - One ZigBee SEP-enabled Utility Smart Meter
- Streams 1-minute energy data in real-time to the ESP Cloud and to as many additional remote databases as desired (using an API)
- Onboard demand management control over IP or dry contacts with less than 1 minute response time
- Certified with an embedded Automated Demand Response (ADR) client compatible with Open ADR 1.0 and 2.0b protocols
- Preserves data in local memory for up to a year until receiving confirmation of cloud storage
- Utilizes features that optimizes existing EMS and BMS infrastructures
- Designed to leverage currently deployed automation infrastructure and avoid stranded asset costs
- Exceeds LEED v4 requirements
- Complies with International Performance Measurement and Verification Protocol (IPMVP)
- Additional data security with 128-bit encryption

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MelRok ESP Touch

How does it work?

To connect an existing energy meter to the ESP Cloud, install the ESP Touch and connect it to the meter using Modbus, BACnet, SNMP, or other protocol. Once connected, the ESP Touch starts to collect data from the energy meter and sends it to the ESP Cloud (or another database using an API).

Once in the cloud, use the ESP User Interface to view, analyze, and generate reports on that data.

Unleash the Power of Big Data

The ESP Touch propels energy management to the world of real time big data collection, analytics and reporting. The ESP Touch amplifies the return on investment of spent energy capital expenditures by leveraging existing energy metering and management infrastructure for maximum benefits. Streaming and actionable energy information, to levels only achievable using big data engines, are a necessity in today's energy reality. The ESP Touch makes it possible.

About MelRok

MelRok is a developer of demand side solutions for tomorrow's energy grid. The MelRok solutions leverage the latest in cloud-based technology, digital communication, and big data analytics to deliver maximum benefit from existing energy systems.

Communication Protocols and I/O:

- Modbus RTU, Modbus TCP
- BACnet/IP
- SNMP
- ZigBee
- RS-485 serial interface
- KYZ pulse counter (input)
- 4 Dry contact relays (output)
- 4 USB ports

Device

- 1GHz ARM CPU with 512MB RAM
- Linux OS
- 4GB Nonvolatile Memory

Duty Cycle

- 100% duty cycle

Communications to Cloud Database

- Wired Ethernet 10 Base T and 100Base-TX (Autosensing)
- Wireless 3G/4G LTE

Environmental

- Operating temperature: -20 C (-4 F) to 55 C (131 F)
- Storage temperature: 60 C
- 95% non-condensing humidity

Packaging

- Wall mountable enclosure
- NEMA rated enclosures

Dimensions

- 12" x 12" x 4" (305mm x 305mm x 101.6mm)

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