



Features

- **Energy Usage Reporting on Loads**
- AI Facility Benchmarking
- **AI Demand Control**
- Ethernet Based
- Verify Savings from Energy Saving Initiatives
- **Predicts Energy**
- Web Based Software

THEORY AND APPLICATION

The E.S.S (Energy Surveillance System) combines the abilities of AI energy monitoring and demand control into one smart system. The E.S.S is a Web Based System capable of monitoring and providing demand control to 2500 facilities within the company's network.

MONITORING CAPABILITIES

E.S.S gathers information from transducers which can measure energy usage on all electrical loads.

Example of loads measured:

- Compressors
- HVAC
- Lighting
- Main Power

E.S.S sends e-mails to alert the Energy Manager of energy usage and equipment abnormalities on the electrical loads.

AI UNIQUE FEATUTURE

E.S.S contacts the meteorological station daily to gather weather information such as wind speed, temperature, humidity etc. By compiling this data the E.S.S can predict energy usage for the following day. This ensures that the user only receives an email about abnormal energy usage when it is really applicable.

E.S.S also has a built in "Employee Energy Awareness" algorithm to encourage energy conservation at the facility level.

DEMAND CONTROL CAPABILITIES

E.S.S uses a sophisticated AI load shedding algorithm that provides automatic load limit adjustment. The system has programmable outputs for cycling loads on a priority basis. This ensures that the equipment being shed is not continually shed at the same time, so daily operation is not affected. In addition, E.S.S automatically resets itself so it is synchronized with the utility meter for bill verification purposes.

WHY DO WE NEED E.S.S?

- **Verify savings from energy saving initiatives**
- Maintain peak efficiency in every facility
- Provide detailed reports to upper management regarding energy saving initiatives
- **Provide data for facility benchmarking**
- Reduce the amount of man power required to maintain facility efficiency.
- **Perform demand control automatically**



Old Demand	400 kW
New Demand	<u>340 kW</u>
Demand Reduction	60 kW

Real Demand Cost	\$ 20
Total Savings per Month	\$ 1,200
Yearly Savings	\$ 14,400*

*Savings will vary depending on load and demand cost.

SPECIFICATIONS

PLATFORM – Programmable Logic Controllers (PLC)

COMMUNICATION

Type Ethernet, LAN, Web Browser
Rate: 10Mbps/100Mbps

I/O CONTROL CAPABILITY

Discrete Inputs: 16 x 255 Nodes
Discrete Outputs: 8 x 255 Nodes
Analog Inputs (3 Bits/0-5VDC): 4 x 255 Nodes
Light Level Monitoring: 255 Nodes
Power Consumption Monitoring: 3 x 255 Nodes

SAMPLING NET RATE

I/O Control: continuously
Price Monitoring: continuously

MODES OF OPERATION

Automatic:

- Demand Control
- Real Time Pricing

Manual:

- Energy Monitoring
- I/O State Monitoring
- Light Level Monitoring

NUMBER OF MONITORED LOADS

17 standard (expandable)

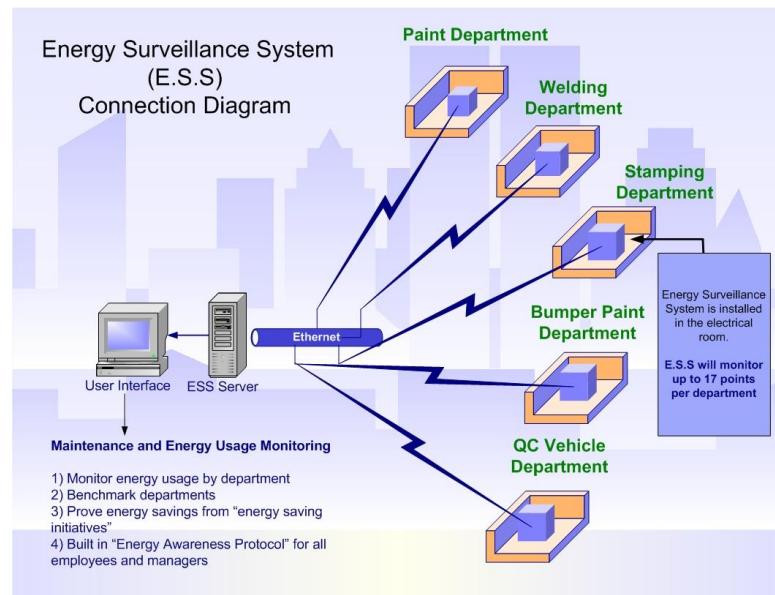
DIMENSIONS

D-6" X W-2" X H-12"

ENCLOSURE

Material Steel – NEMA 12

NETWORK DIAGRAM



EG Energy Controls – Operated by Electron Test Equipment Ltd.

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Contact Information

Product Line

VoltMiser | Automatic Voltage Regulator

DemandMiser | AI-Driven Demand Controller

ESS | AI-Driven Energy Monitoring System

PowerMiser | Smart Motor Power Savings

Not All Energy Management Systems Were Created Equal.