



Telkonet SmartEnergy™ delivers maximum energy savings and guest comfort

Controlling your energy consumption can make a significant impact on your bottom line, as heating, ventilation and air conditioning (HVAC) costs represent a substantial portion of a facility's overall utility bill. Energy is often wasted by heating and cooling rooms that are unoccupied for a long period of time, such as in hotels, where guest rooms are typically vacant between 30% and 70% of the time. Continually running HVAC equipment in vacant rooms also increases the maintenance overhead and shortens the equipment's working life. It all adds up to unnecessary waste and cost.

Making the Difference with Recovery Time™ Technology

When a room is occupied, the temperature selected by the occupant will be maintained by Telkonet SmartEnergy. However, whenever the Energy Management Occupancy Sensor determines that the room is unoccupied, the Energy Management Controller or Energy Management Thermostat adjusts the room temperature using the RT technology. Unlike other systems, RT technology constantly performs calculations that evaluate how far each room's temperature can

Minimizing the energy footprint of buildings and businesses is a universal responsibility. It is good for the planet as a whole, benefits the immediate environment, and provides tangible returns for business – in terms of both image and profitability.



Intelligent Energy Management with Telkonet SmartEnergy

Telkonet SmartEnergy (TSE) is an intelligent and advanced solution designed to deliver at all levels by controlling your HVAC usage and improving energy efficiency. It achieves this by using a combination of occupancy sensors, along with intelligent programmable thermostats or packaged terminal air conditioner (PTAC) controllers, to adjust and maintain a room's temperature according to occupancy, eliminating wasteful heating and cooling of unoccupied rooms.

TSE is the only energy management system that delivers optimum energy savings without compromising occupant comfort, thanks to a patented technology – Recovery Time™ (RT) technology – that works quite differently from other in-room energy management systems.

drift from the occupant's preferred setting (setpoint), to maximize energy savings and still return within the preset recovery time.

When determining the temperature setting, RT technology considers recovery time – how long it will take to return the temperature to the occupant's setpoint once they return to their room. The temperature will only drift far enough to ensure the system will return to the occupant's preferred temperature setting within minutes upon their return to the room. Recovery time is selected by property management at the time of the installation; however, it can be altered at any time by management.

Utilizing Recovery Time™ technology, TSE is significantly different from other occupancy-driven energy management solutions.

Telkonet SmartEnergy – saving you energy and saving you money, while helping to minimize your building's impact on the environment.



Advanced monitoring feature turns off PTAC when lanai door or window is opened

Room-by-Room Savings

Since each room's environment is different, every room is evaluated independently in real-time to determine its energy-efficient temperature, or setback. RT technology constantly calculates in real time how far the room temperature can drift by taking into consideration all the environmental characteristics that impact the temperature in the room, including:

- The occupant's preferred temperature setting
- The location of the room within the building
- The window placement – facing the sun or shade
- If the drapes are open or closed
- If the climate is dry or humid
- The varying weather conditions throughout the day
- The condition of the HVAC unit, such as age and efficiency

Through the constant monitoring of the HVAC unit's ability to drive the temperature and the real-time adjustment of the setback temperature, rooms are never excessively hot or cold when an occupant returns to the room. The room will always be just minutes away from an occupant's desired comfort setting. As a result, RT technology delivers room-by-room, occupant-by-occupant savings.

Optimum Energy Management with Maximum Guest Comfort

Telkonet SmartEnergy, with Recovery Time technology, is significantly different from other energy management solutions that use a fixed setback system. With a fixed system, the setback temperature is often set to one fixed temperature, or alternatively, the user's setpoint is increased/decreased by a fixed deviation. This is done regardless of user setpoint, room conditions, HVAC capability, recovery time, etc. With all the rooms set to the same temperature when unoccupied (or all setback by the same amount), energy savings are not being maximized, and occupants can experience uncomfortable temperatures when the room takes too long to recover to the setpoint temperature.

With Telkonet SmartEnergy, the calculations optimizing the combination of temperature drift and recovery time for each room guarantees significant energy savings and occupant comfort. Only Telkonet SmartEnergy delivers this superior, individualized approach to ensure that occupants remain comfortable and satisfied throughout their stay, while also maximizing energy savings.

SmartEnergy Management Reporting

Telkonet SmartEnergy can also provide valuable energy management reports. These can be produced by downloading data directly from the Energy Management Thermostat or Energy Management Controller to a laptop computer in the room. The reports contain energy cost-savings and consumption information, as well as HVAC and PTAC runtime savings, HVAC unit efficiency, occupancy statistics and ROI calculations.

Telkonet SmartEnergy Applications

Since 1992, the proven technology developed by Smart Systems International, now a Telkonet company, has been helping a wide variety of customers reduce their energy consumption, with over 80,000 product installations. Applications include:

- Hotels, motels, resorts
- Timeshares, extended-stay suites
- Casinos
- Schools and dormitories
- Military facilities and barracks
- Government buildings
- Commercial buildings
- Utility companies

Major utilities with energy management programs are installing TSE for energy-saving retrofits for hotels and motels.

Delivering Tangible Energy Efficiency

Telkonet SmartEnergy, with proven Recovery Time technology, can help you achieve significant energy efficiencies and HVAC control, resulting in substantial decreases in energy consumption and costs, while guaranteeing occupant comfort and satisfaction.

Telkonet SmartEnergy Benefits

- Helps to minimize a building's energy footprint
- Generates cost savings – Eliminates wasted energy from heating and cooling unoccupied rooms
- Ensures occupant comfort
- Reduces HVAC-related complaints
- Room-by-room energy savings – Recovery Time technology generates greater savings than fixed setback systems
- Cost-effective installation – Uses wireless technology communicating via radio frequency
- Maximizes room comfort – Patented Recovery Time technology ensures the room temperature will recover to the occupant's temperature setpoint within minutes after the occupant returns to the room
- Offers rapid return on investment – Typical ROI of two to three years
- Reduces wear and tear on HVAC units – Ensures longer life and reduced maintenance
- Humidity protection – Refresh cycle or direct relative humidity (RH) percentage targeting protects soft goods

Special sleep mode settings automatically adjust to ensure occupant comfort



TSE can reduce energy usage up to 30% or more by automatically adjusting a room's temperature.

Telkonet SmartEnergy Features

- Guaranteed recovery time to ensure guest comfort
- Pre-programmed recovery time, with the option for management to change the settings
- Recovery Time technology adapts in real time to changing weather and environment
- Simple maintenance – The SS2000 requires only the replacement of four AA batteries every two years or can be optionally hard-wired
- Simple operation – User sets the desired room temperature; TSE does the rest
- Humidity control – Support for active dehumidification (SS5000) as well as refresh cycling (SS1107 and SS5000)
- Feature-rich – The SS5000 has 132 programmable features, including vacation mode, setpoint limiting, humidity refresh cycling, fan optimization
- PC downloadable data, used to generate savings analysis, payback information and ROI reports

Telkonet SmartEnergy Components

SS2000 Energy Management Sensor



SS1107 Energy Management Controller



SS5000 Energy Management Thermostat



SS2000 Energy Management Occupancy Sensor

The SS2000 uses digital signal processing and passive infrared technology to detect motion and body heat in a room, including sensing when a person is sleeping. Typically placed on the ceiling, the SS2000 communicates via a wireless radio link to the SS5000 Energy Management Thermostat or the SS1107 Energy Management Controller.

SS5000 Energy Management Thermostat (EMT)

In rooms with central or room-controlled HVAC systems with thermostats, the SS5000 Energy Management Thermostat maintains the occupant's preferred setpoint (temperature setting) when the room is occupied. When vacant, the SS5000 recalculates the setpoint, allowing the temperature to drift to the new temperature determined by the preferred recovery time. The SS5000 regularly adjusts the temperature to energy-efficient settings.

SS1107 Energy Management Controller (EMC)

In rooms with packaged terminal air conditioners (PTACs), the SS1107 Energy Management Controller maintains the occupant's preferred setpoint (temperature setting) when the room is occupied. When vacant, the SS1107 works with the PTAC unit to adjust the setpoint to the new energy efficient temperature. This will continue until the occupant re-enters the room and the SS1107 allows the PTAC to return the temperature to the occupant's original setpoint within the predetermined recovery time.

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