



# Telkonet SmartEnergy™

## Energy Management Solutions

### SS5000 Energy Management Thermostat Features Comparison



The table below lists the major features of the SS5000 Energy Management Thermostat Models. The revision 4 and 4.5 models are ideally suited for the hospitality / dormitory / education markets where an effective, cost-efficient energy management system is important. The revision 4.5 has been upgraded from revision 4 to support hard-wiring, additional fan speeds, a simpler user interface, an optional interface for wireless networking, load shedding, door contact monitoring, and a field-upgradeable CPU. Revision 4.5's HVAC state machine engine has been completely rewritten to allow for significantly improved use customization. This allows for support of virtually any HVAC/PTAC system on the market (single or multiple fan speeds) aside from pneumatics.

The revision 4.6 model has all the features of the revision 4 and 5 models, but adds functionality that is critical for utilities and customers that require in-depth Measurement and Verification (utility grade, time of day capable data logger) and occupancy anticipation. The revision 5 and 5.1 models are ideally suited for customers desiring advanced humidity and ventilation controls (important for the education market), occupancy anticipation, and optional lighting control with the revision 5.1 supporting additional features, such as a second dry contact switch, flash programmable CPU, optional wireless interface, and faster serial data rates.

FEATURE	DESCRIPTION	R4	R4.5	R4.6	R4.7	R5	R5.1
Standard PST5000 Features	Recovery Time-based energy management system that allows for energy savings in unoccupied rooms as well as energy management limits for savings in occupied rooms	✓	✓	✓	✓	✓	✓
SS2000 Energy Management Occupancy Sensor Compatibility	Receives occupancy messages from the SS2000 Energy Management Sensors to determine a room's occupancy state	✓	✓	✓	✓	✓	✓
Full SmartView Support	The system can be re-programmed, operationally verified, and performance analyzed using the SmartView program	✓	✓	✓	✓	✓	✓
Serial Communication Support	Stereo data jack available for external communications	✓	✓	✓	✓	✓	✓
Dynamic Relay Configuration (Lighting Control, etc.)	Allows configuration of relays for non-HVAC functions based on occupancy or time of days, such as lighting	✓	✓	✓	✓	✓	✓
Statistics Logging	Accumulates data across 39 variables to analyze system performance, savings, and communications	✓	✓	✓	✓	✓	✓
Extended Power Input Range	Allows a wider power input range 10V – 35V AC 8V – 40V DC		✓	✓	✓	✓	✓



FEATURE	DESCRIPTION	R4	R4.5	R4.6	R4.7	R5	R5.1
Optional External Relay Power Switching (Low Voltage)	System can switch either the supplied power source or an external source		✓	✓	✓	✓	✓
Improved Serial Port Communication	More reliable communication to reduce noise interference		✓	✓	✓	✓	✓
Hardwire Occupancy Sensor	Supports sensors hard-wired to the thermostat for non-wireless applications		✓	✓	✓	✓	✓
Detailed Sensor Monitoring	Has the ability to provide very detailed information on all sensor messages to enable a user to observe precise time stamps of all occupancy arrivals and departures as well as monitor signal strength for all nearby sensors		✓	✓	✓	✓	✓
Dry Contact Switch Input	Advanced door or window monitoring that allows the HVAC to be turned off if the doors or windows are opened. System can also use the door contact to assist in determining the room's occupancy state (optional)		✓	✓	✓	✓	✓
Load Shedding	Support load shedding on demand		✓	✓	✓	✓	✓
3-Speed Fan (Fancoil)	Accommodates 3 fan speeds for HVAC systems that are capable		✓	✓	✓	✓	✓
Field-Adjustable HVAC Operation	The rules which dictate when the thermostat engages the relays and which relays to engage in which state can be completely field adjusted. This allows for greatly increased compatibility for virtually any HVAC system (single or multi-speed) and any desired method of operation		✓	✓	✓		✓
2-Speed Fan Control for Heat Pump Systems	Allows for automatic or manual 2-speed fan control for heat pumps, including support for mode-based fan control (i.e. cool on high, heat on low, etc.)		✓	✓	✓		✓
Manual 2- and 3-Speed Fan Control	Allows occupant to manually change the fan speed		✓	✓	✓		✓
Real-Time Clock with Supercap	Temperature-compensated internal clock will keep very accurate time to support data logging, occupancy prediction, and scheduling			✓	✓	✓	✓
Event Log	Time and date log of all events occurring with the thermostat, including; occupancy, departures, load shed events, configuration changes, power-ups, etc.			✓	✓	✓	✓
External EEPROM, 64 Kbyte	Extra non-volatile memory used for utility-grade data logging, The additional data logging capability adds hour logging of 17 variables, as well as the recording of key events (arrivals / departures, load shed events, etc.)			✓	✓	✓	✓

FEATURE	DESCRIPTION	R4	R4.5	R4.6	R4.7	R5	R5.1
Occupancy Prediction	An optional feature that uses the occupant's actual observed arrival and departure times over 30 days to predict future arrivals and departures for any day of the week. This allows the temperature to drift further when the space is expected to be vacant and also start-up in anticipation of an occupant's arrival			✓	✓	✓	✓
Auto-Daylight Savings Time	Automatically adjusts to compensate for daylight savings time			✓	✓	✓	✓
Ventilation and Dehumidity Relays	For HVAC units that have ventilation and dehumidification components, occupancy-based control is possible					✓	✓
Humidity Sensor	Allows humidity levels to be sensed in real-time and can engage active dehumidification elements and / or air conditioning to counteract humidity. Allows a user to enter the precise RH% the wish to target				✓	✓	✓
Temperature-Compensated RTC Time Base	Internal clock is a very precise clock that adjusts each minute for temperature fluctuations					✓	✓
2nd Dry Contact Switch Input	Added to allow for a second door or window to be monitored; also to allow for a hard-wired load-shedding input		✓	✓	✓		✓
High-Speed Wireless Communication Port	Extra data port for communication via ZigBee network		✓	✓	✓		✓
Flash Upgradeable CPU	Microprocessor can be upgraded via the serial port or the high-speed wireless ZigBee network		✓	✓	✓		✓
Fast Serial Communication (up to 115,200 bps)	Support BAUD rates of 1,200, 9,600, 57,600 and 115,200		✓	✓	✓		✓

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