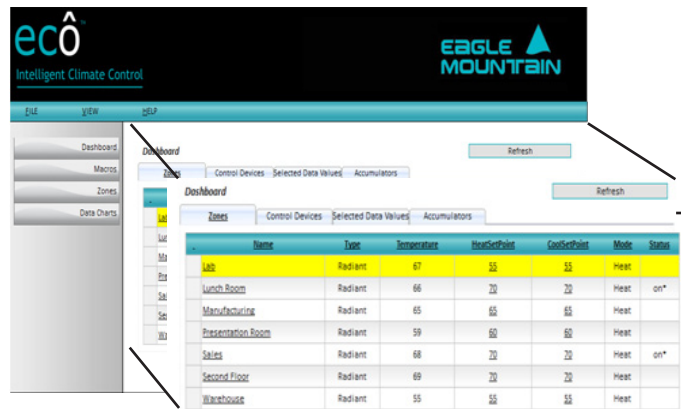# ecô

Intelligent Climate Control

EAGLE
MOUNTAIN

Ecô delivers full-fledged climate control and energy management to the residential and small commercial user.

A lot of HVAC control systems can monitor environmental conditions and energy usage. They can even let you turn thermostats up and down. With Ecô you have this entire capability and more. Ecô proactively reacts to changing weather conditions before they happen and without user input to keep the living space comfortable. Saying it more simply, Ecô manages the living environment by itself. It even lets you know if there is a problem within the system.

Ecô is a browser-based management system that can be securely controlled in-house or remotely from virtually any web-browser enabled device able to connect to the internet.

Ecô does not require the use of any proprietary hardware. It can be used with virtually any type of HVAC system including those mixing hydronic and air heating and cooling as well as multiple types of heat sources from geothermal heat pumps to boilers to traditional furnaces.

Ecô is the first system of its kind delivering full-fledged intelligent climate clontrol and energy management capabilites to the residential and small commercial HVAC marketplace...at a fraction of the cost of commercially available systems.

Ecô monitors and adjusts system based on forecasts from the National Weather Service (NOAA).

1) Ecô Computer – The Eco software resides on a dedicated computer equipped to run this powerful and highly flexible database software plafform. The homeowner has complete authority over access to the system.

2) Ecô Configurator – Using this software, the installer integrates the HVAC system with the unique and specific controls solution as defined by the homeowner. Some of the configuration options include:
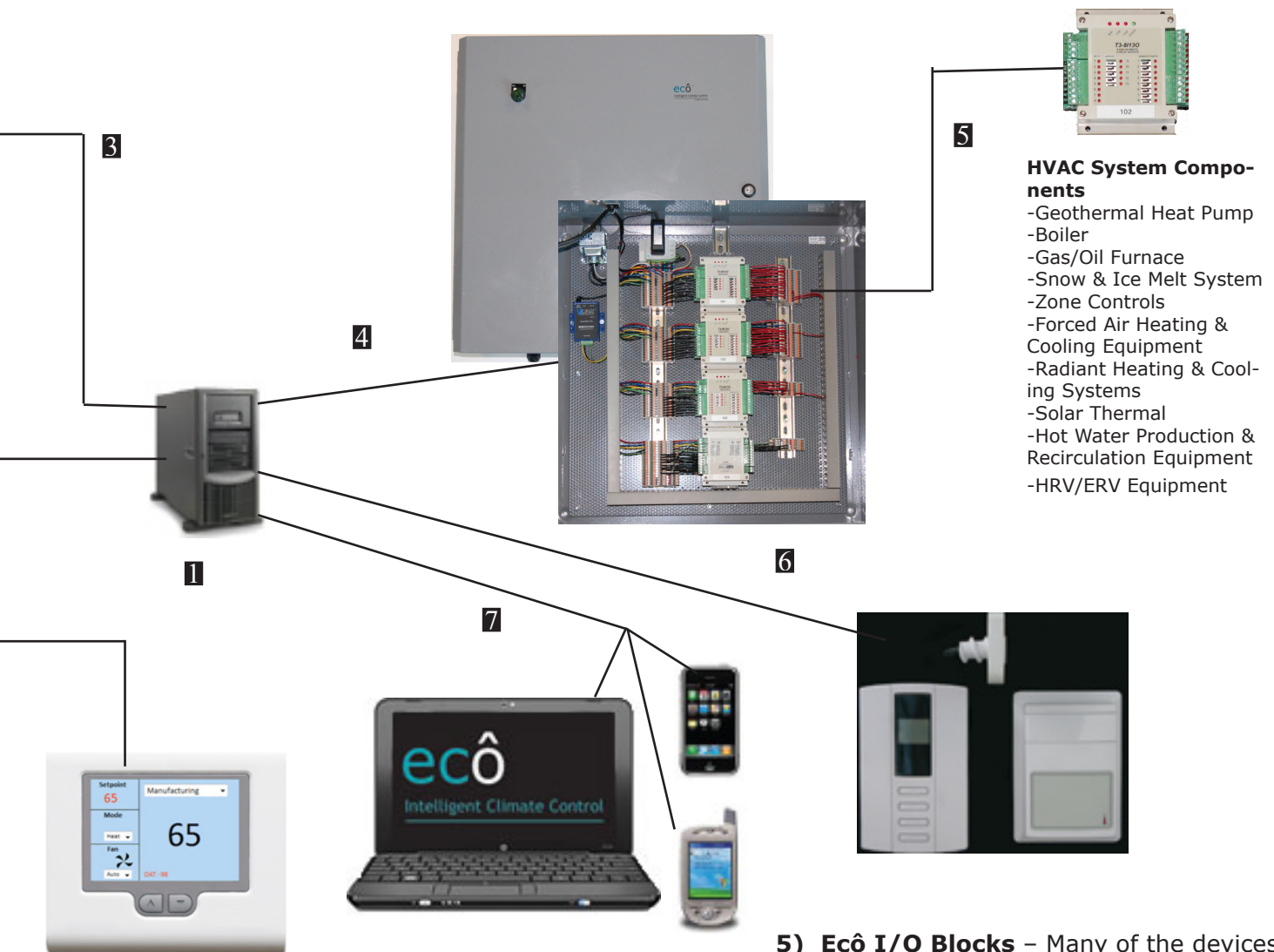- Defining virtual thermostat thresholds for each zone
- Defining sensors and relays to monitor and control HVAC system components
- Defining operating parameters for various conditions including temperature, humidity, KWH usage, CO2 levels, etc.
- Setting up the outdoor reset curve.

The Ecô Climate Control System

HVAC System Components
-Geothermal Heat Pump
-Boiler
-Gas/Oil Furnace
-Snow & Ice Melt System
-Zone Controls
-Forced Air Heating & Cooling Equipment
-Radiant Heating & Cooling Systems
-Solar Thermal
-Hot Water Production & Recirculation Equipment
-HRV/ERV Equipment

3) Ecô Control Center – From any web-enabled device, the user can access the control Center software for an overview of their current operating conditions and, if they desire, can make adjustments to the system settings including
- Adjustments to system or system devices based on temperature, humidity, KWH usage, or CO/CO2 levels.
- Turn water heater on or off
- Setpoint temperatures for individual zones

4) Ecô Control Panel – The Ecô Control Panel acts as the central wiring hub for all sensors, equipment, and any input or output devices in the system. It simplifies installation and future maintenance while providing organization and protection for the communication components of the system.

5) Ecô I/O Blocks – Many of the devices in the Ecô System are connected through the Input/Output bllocks. The I/O blocks allow these devices to be controlled by the software.

6) Ecô Sensors and Communicating Thermostats – Strategically placed sensors, meters, or other communicating devices such as thermostats, provide the necessary feedback from the conditioned areas being controlled by the Ecô system.

7) Internet Access – Users can view and manage system parameters in their Ecô system via most web-enabled devices including their smart phone, tablet PC, or other device.

Feature/System Requirement	Ecô System Capability
No. of Thermostat-controlled Zones	Unlimited
No. of Air Zones system can control	Unlimited
No. of Digital Zone Controls	Virtually Unlimited (Limit is actual number of physical I/O blocks accommodated)
No. of Zone Pumps	Unlimited
No. of Zone Valves	Unlimited
No. of Air Handlers (e.g. – any device moving air)	Unlimited
No. of Energy/ Heat Recovery Units (ERV/HRV)	Unlimited
No of CO/CO2 Sensors	Unlimited
No of Mixed Water Temperatures	Unlimited
No of Boilers	Unlimited
No. of Snow Melt Zones	Unlimited
No. of System Heat Stages	Unlimited
Domestic Hot water Circulation	Yes
Geothermal Heat Pump Reversing Valve Control	Yes
Multiple Schedules	Yes (can be specific to zones, time, season, vacation, DHW controls, weather, etc.)
Radiant Cooling Enabled	Yes - monitors and adjusts relative humidity (using sensors) so radiant cooling surfaces do not form moisture.
System Control & Customization	Yes – using timers and macros created by homeowner, installer, or Eagle Mountain.
Weather Service Interface	Yes – able to make system adjustments based on both current and forecasted weather conditions without interaction required by homeowner
Error Detection and Alarm Notification	Yes – Sends test and/or e-mail messages when alarms and errors occur.
Heartbeat	Yes – At Homeowners option reports to software provider's server periodically. Notifies homeowner if a report is missed.
File Back-up	Yes - Backs up files daily to homeowner-designated hard drive or flash drive.
Kilowatt Hour (KWH) Monitoring	Yes – Tracks KWH consumption. Able to suggest adjustments to help manage carbon footprint.
Reports and Graphs	Yes – Creates data tables and graphs on historical and current system operation and performance. Can be device, zone, or condition specific.
Management via Web-enabled Device	Yes– Manage via a computer, tablet, smart-phone or nearly any other web-enabled device
Ecô Climate Control System	Yes – Manage via a computer, tablet, smart-phone or nearly any other web-enabled device.

Individual system capability defined by the Eco package actually purchased. Contact Eagle Mountain for more information.

EAGLE MOUNTAIN™