Integrating radiant cooling and heating into smart homes

One unique control platform for combined radiant and air systems

radiantcooling.com
The new Messana control solution for hydronic radiant systems... and more!

**Control energy sources for optimized efficiency**
Controls chillers, heat pumps and boilers single-stage or two-stage heating and cooling.
Maintains optimum buffer tank temperature (primary loop) and control supply temperature (secondary loop) by modulating 3-way mixing valve based on supply return temperatures.

**Manage ideal indoor humidity for maxim comfort**
Controls humidifiers, dehumidifiers and air treatment units to maintain optimal ThermalWellbeing™.

**Improve Indoor Air quality**
Based on true CO₂ or VOC readings optimizes heat recovery ventilation (HRVs, ERVs) to save energy and improve quality of life.

**SMART Domestic Hot Water (DHW) control**
Optimizes multi-stage heating supplies (boiler, solar, heat pump) as well as recirculating pumps through programmed scheduling, temperature and/or room based presence sensors to provide instantaneous hot water supply only when needed.

**Control for fan coils**
Gentle control of air handlers as convective integration of the radiant system. Support for major HVAC air handlers (Daikin, Hitachi, LG, Mitsubishi, Samsung)*.

**Energy Saving advanced features**
Deliver just enough heat (or “cool”, by radiant heat extraction) to meet internal loads avoiding heat pump cycling.

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1. Living Room
2. Kitchen
3. Garden
4. Family Room
5. Balcony
6. Courtyard
7. Home Office
8. Safety Room
Optimized control for radiant ceiling panel (Ray Magic)¹

Based on a proprietary technology that optimizes the radiant system performance in terms of energy efficiency and comfort, while and always maintaining an accurate and uniform indoor temperature. It also controls 4-pipe system for simultaneous radiant cooling and heating.

Radiant floor control for both heating and cooling ¹

Controls radiant fluid to maintain a comfortable floor and room temperature.

Integrates advanced room comfort sensors (mSense) to offer unlimited zoning

Connects with mSense to monitor operative temperature, humidity and indoor air quality (IAQ) to deliver the best comfort in your home.

Connects with home automation systems ²

Integrates with Control4, Lutron, Savant, Crestron and many more. BacNet and Modbus compatibility.

Messana App

Web and mobile full-system control app.

The new Messana web and mobile app, gives you full control of the radiant cooling and heating system from anywhere in the world. It features a friendly and intuitive user interface to interact even with the most sophisticated systems, all at your fingertips.

The Messana app fits seamlessly into your life to provide the perfect ThermalWellbeing™, precisely when and where you want it.

Other unique features

Universal schedules applicable to different functions.
Historical data analysis (mGraph) with custom templates.
Setback function to use less energy when you are away or sleeping.
H/C programmable or auto-adaptive changeover based on outdoor conditions.
Backup and Restore configurations.
Guest logins.

Notes

1. Based on proprietary PID control logic technology to modulate radiant fluid temperatures so that surfaces always stay above the dew-point temperature to prevent condensation.
2. Requires additional gateway module.
mControls is the latest in-home climate control technology

Designed by Messana with over twenty years of experience, specifically for hydronic systems

mBox
HVAC/Radiant automation and control module

The main unit of the home climate control system. Typically installed in the mechanical room, it regulates the home energy flow to deliver optimal Thermal Wellbeing™. It controls energy resources (heat pumps, chillers and boilers) with multi-staging, Domestic Hot Water, Heat Recovery Ventilation based on Indoor Air Quality and Neutral Temperature Dehumidification.

mZone
zoning module (available for 8 or 12 zones)

The mZone module connects up to 12 mSense room sensors. It is installed at the manifold location to activate thermal actuators, recirculating pumps, mixing valves, 2-way and 6-way zone valves and air handlers. It is designed for 2-pipe as well as 4-pipe distribution systems capable of simultaneous heating and cooling demand. It also works with hybrid radiant/forced-air cooling and heating systems.

mSense
a new generation of room comfort sensors

mSense measures the three fundamental indoor environmental parameters that influence the wellbeing and thermal conditions of occupants: operative temperature, relative humidity (dew-point) and air quality. In the past, typical room thermostats only provided air temperature as the sole index of thermal conditions in your home.