INTERACTIVE ENERGY SYSTEMS

Energy Sentry Demand Control Systems

Capability overview for commercial and industrial facilities

Your utility bills you twice for electricity. Once for how much you use, measured in kilowatt hours, and again for how fast you use it at your single highest moment of the month, measured in kilowatts. That second charge is the demand charge, and it is often a quarter to a half of a commercial bill.

An Energy Sentry demand controller watches your building's total load in real time and briefly cycles selected non critical equipment to keep you under a demand ceiling you set. You use the same electricity. You simply stop paying the penalty for using it all at once.

How large a facility can we serve?

Energy Sentry covers everything from a single suite to a 10 MW industrial plant. The right model depends on your peak demand, your electrical service, and how your loads are spread across the building.

Model	Demand range	Typical application
9388A	Up to 40 kW (80 kW option)	Single phase service. Homes, very small facilities, single tenant suites.
9388B	Up to 1,000 kW	Small to mid commercial. Compact enclosure with built in high power load relays. Churches, small offices, retail, small schools.
9388C	Up to 1,000 kW	Larger commercial. Sixteen channels driving remote or power line carrier relays for loads spread across the building. Schools, clubs, hotels, multi building campuses, senior living.
9388M	500 kW up to 10 MW	Industrial. Manufacturing, processing, cold storage, large institutional plants.

The kilowatt figure is set by how the controller is configured to read your service, which we specify for your meter and rate. Every unit provides up to 16 independently controlled load channels regardless of building size, so the design work is in choosing and grouping the right loads rather than in the kilowatt rating. Larger and custom ranges are available on request.

How your building is measured

Commercial buildings run on three phase power, and the controller has to see all three phases to know your true demand. We use whichever method fits your service and your utility.

Method	When we use it
Current transformers with a watt hour transducer	Split core or Rogowski sensors clamp onto the service conductors. Used when we can safely access your main conductors. No interruption to your service.
KYZ pulse from the utility meter	The controller reads pulses directly from your revenue meter. Used when the utility does not permit access to the CT cabinet.

Control signals reach your equipment either by direct wiring or by power line carrier, which sends the control signal over your building's existing copper. Power line carrier means no new conduit and no new cable pulls across the building, which is how most multi panel commercial sites are done.

What we control, and what we never touch

Only loads that are large contributors to your peak and that store energy are managed. Your operations do not change.

Managed	Never managed
Air conditioning compressors and rooftop units	Lighting
Electric heat strips and furnaces	Computers, servers, point of sale
Water heaters	Refrigeration and food safety equipment
Pool and irrigation pumps, EV charging	Production and process equipment critical to your operation

The method works because buildings store energy. A space does not become uncomfortable because cooling paused for a few minutes, and water in a tank stays hot for hours. Each load is assigned a priority you set, so the equipment your occupants would notice is the last thing to be touched and the first thing restored.

What makes a strong candidate

The best predictor is load factor, the ratio of the energy you actually used to the energy you would have used if you ran at your peak the entire month. A low load factor means your demand is spiky, and spiky buildings have the most to gain.

Load factor	What it means for you
10 to 30 percent	Excellent candidate. Sharp, short peaks with long quiet periods. Modest load control produces a large reduction in the demand charge.

Load factor	What it means for you
30 to 50 percent	Good candidate. Worth a full bill analysis and site walkthrough.
Above 60 percent	Flat, steady demand with little to shift. Savings are usually thin and we will tell you so.

Facility types that typically profile well:

- Churches and worship centers, which peak hard on service days and sit empty the rest of the week
- Schools, gyms, and community centers with scheduled occupancy
- Golf and country clubs, event venues, and banquet facilities
- Offices, light retail, and professional buildings with heavy HVAC loads
- Hotels, senior living, and multi building campuses
- Light manufacturing and processing plants with intermittent equipment

A second way to save

Many utilities move a customer onto a demand rate once they cross a threshold, often somewhere between 25 kW and 50 kW. If your facility sits just above that line, holding you below it can remove the demand charge entirely rather than simply reducing it. We check your tariff for this before quoting.

How a project comes together

1. **Bill and rate analysis.** We review your last twelve months of bills and calculate your load factor, your peak demand, and what your demand charges are actually costing you.
2. **Interval data.** Where your utility offers it, we pull a year of interval data from your smart meter. That shows exactly when your peaks occur, how often, and how large they are.
3. **Site walkthrough.** We walk the building with you, locate the main distribution panel and every controllable load, and record breaker sizes, panel locations, and equipment ratings.
4. **Savings projection and proposal.** You receive a written projection of demand reduction and dollar savings on your specific rate, along with a fixed equipment and installation quote.
5. **Installation and commissioning.** We install, program the controller to your utility's rate plan, set your demand limit and load priorities, and verify operation on site.
6. **Verification.** We compare your post installation bills against the prior year, adjusted for weather, so you can see the actual result rather than a promise.

There is no charge for the bill analysis. We will tell you honestly if your building is not a good fit.

What we need to get started

- Twelve months of electric bills, or online utility account access
- Your utility and rate plan name
- Service size and voltage, and whether heating is electric or gas
- Number and size of HVAC units, water heaters, and other major electrical equipment
- Approximate square footage and your normal occupancy schedule

About Interactive Energy Systems

Interactive Energy Systems is a leading authority in energy management systems for residential, small, and mid size commercial applications. We do one thing: we find demand charges hiding in electric bills and we take them out. That focus is why utilities, building owners, and facility managers come to us.

The Demand Automation Computer (DAC) is built on more than forty years of demand management engineering. The systems are UL listed, carry a five year parts and one year labor limited warranty with extended coverage available, retain all settings and timekeeping through a power outage, and operate with no routine maintenance. They work alongside solar installations, and remote monitoring is available.

Interactive Energy Systems

Energy management systems for residential, small, and mid size commercial applications. Contact us to schedule a no cost bill analysis.