

MITSUBISHI ELECTRIC
COOLING & HEATING

DIAMOND CONTROLS

Utility Monitoring

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Diamond Controls: Utility Monitoring

Mitsubishi Electric Cooling & Heating's Diamond Controls advanced communication abilities enable monitoring of utility consumption.





Mitsubishi Electric Cooling & Heating Diamond Controls advanced communication abilities enable monitoring of a building's utility consumption and generation. The Diamond Controls Solution, along with the Professional Solutions Group, can integrate building utility meters, electrical equipment, and power generation panels within a building. The Diamond Controls solution will monitor, trend, and alarm the status points and trend points for consumption or generation from the following equipment:

- Power, water, or gas meter
- Photovoltaic panel inverter
- Generator panel
- Uninterrupted power supplies (UPS)
- Automatic transfer switch (ATS)
- Power distribution unit (PDU)
- Rack PDU

Diamond Controls can display how much, and when, you are consuming the most power, water, or gas. The consumption can be compared to all integrated equipment, including Mitsubishi Electric variable refrigerant flow (VRF) zoning systems.

The utility meter, power device panel, or electrical equipment must be able to communicate by an open protocol communication in order to be integrated into the Diamond Controls solution. Open protocol communication can include, but is not limited to, BacNET, MSTP, BacNET TCP/IP, Modbus MSTP, Modbus TCP/IP, and LONWorks.

Application Example

Mitsubishi Electric Cooling & Heating Diamond Controls was installed in a medium sized office building, with a data center, to manage their 146 Mitsubishi Electric variable refrigerant flow (VRF) indoor and outdoor units. The data center equipment, including a rack mounted PDU, row PDU, UPS, ATS, and generator, was also managed by the Diamond Controls solution. Multiple power feeds from the server to the UPS were also managed. Through the Diamond Controls solution, both rack mounted PDUs power usage were trended, summarized, and compared to ensure neither side was overloaded. This allowed the building owner or manager to know if one of the power feeds goes down or becomes overloaded. In addition, the power feeds are linked to alarms that are monitored by the Diamond Controls solution's network operations center (NOC) alarm console and e-mail notification functionality, allowing the user to know when a fault code is present or if temperature in the data center has gone out of range.

Introducing Mitsubishi Electric Cooling & Heating Diamond Controls

Mitsubishi Electric Cooling & Heating is proud to provide Diamond Controls, a branded, bundled, and seamless building controls solution packaged with our variable refrigerant flow (VRF). Mitsubishi Electric's Diamond Controls is powered by the industry leading NiagaraAX Framework®, the industry's first software technology designed to integrate diverse building systems and devices into one seamless system. Niagara supports a wide range of protocols including LonWorks™, BACnet™, Modbus®, oBIX and Internet standards. The AX Framework also includes integrated network management tools to support the design, configuration, installation and maintenance of interoperable networks. Diamond Controls offers a unique, licensed NiagaraAX Framework® driver that allows us to provide the optimal controls solution for a Mitsubishi Electric Cooling & Heating VRF system.



DC-600E

The Mitsubishi Electric DC-600-E is an embedded controller/server platform that combines integrated control, supervision, data logging, alarming, scheduling and network management functions into a small, compact platform with Internet connectivity and web serving capabilities.
The DC-600E makes it possible to control and manage external devices over the Internet, presenting real-time information to users in web-based graphical views.



IO-16



IO-34



DCPro

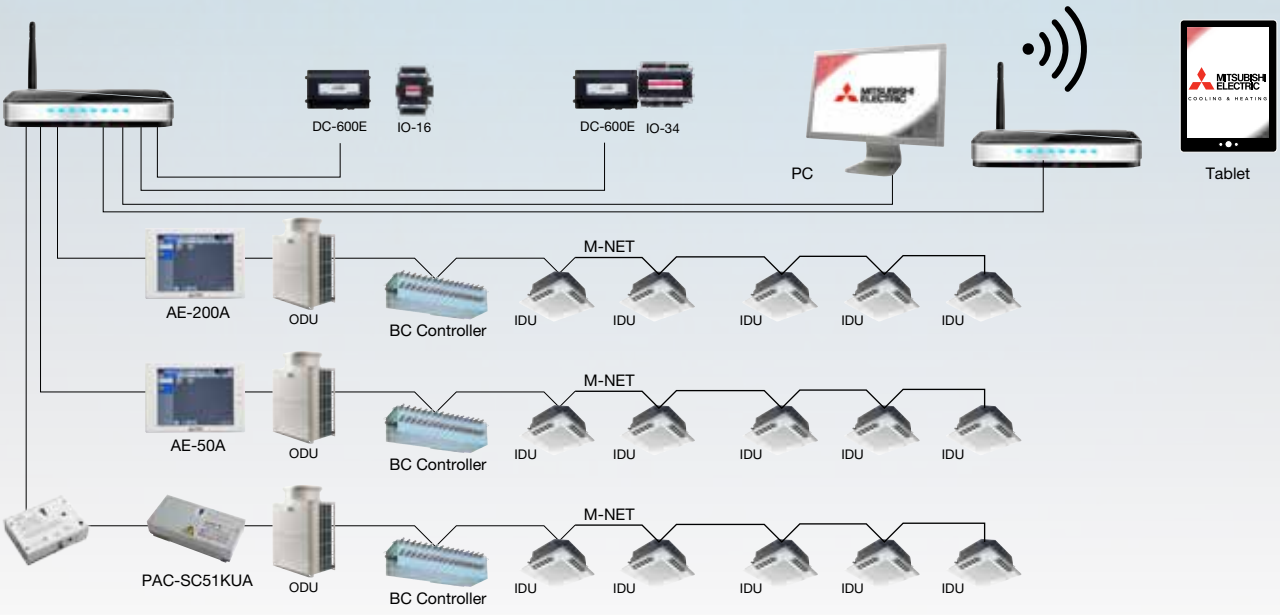
The Mitsubishi Electric DCPro is a flexible network server for all connected DC-600E stations. The DCPro harnesses the power of the Internet to provide efficient integration of standard open protocols. The DCPro creates a powerful network environment with comprehensive database management functionality, alarm management, and messaging services. DCPro can manage global control functions, support data passing over multiple networks, connect to enterprise level software applications, and host multiple, simultaneous client workstations connected over a local network or the Internet.

Optional: 16 point IO module directly connects to DC-600E IO connector with 8 universal inputs, 4 relay outputs, and 4 analog outputs.

Optional: 34 point IO module directly connects to DC-600E IO connector with 16 universal inputs, 10 relay outputs, and 8 analog outputs.

Optional: Remote 16 point IO module and RS-485 bus connected to DC-600E with 8 universal inputs, 4 relay outputs, and 4 analog outputs.

Optional: 24 Volt AC/DC power supply module





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DC-LC 1.15

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