VRV Products Controls

Individual Controllers

REMOTE CONTROLLER COMPATIBILITY WITH *VRV* INDOOR UNITS	FXFQ_TA	FXZQ	FXUQ	FXDQ	FXSQ	FXMQ	FXHQ	FXAQ	FXL(N)Q	FXTQ	FXEQ
Navigation remote controller (Wired remote controller)	●	●	●	●	●	●	●	●	●	●	●
Madoka Remote Controller	●	●	●	●	●	●	●	●	●	●	●
Wireless remote controller (Installed type signal receiver unit)		●					●	●			
Wireless remote controller (Separate type signal receiver unit)				●	●	●			●		
DKN Cloud Wi-Fi Adaptor	●	●	●	●	●	●	●	●	●	●	●

INDIVIDUAL CONTROL CAPABILITIES	 DKN Cloud Wi-Fi Adaptor (AZAI6WSCDKA)	 *Navigation* Remote Controller (BRC1E73)	 Daikin *One+* Smart Thermostat (DTST-ONE-ADA-A)	 Daikin *One* Touch	 Wireless Remote Controller (model depends on unit)	 *Madoka* Remote Controller (BRC1H71W)
Communications	2 Wire / DIII-Net	2 Wire / DIII-Net	2 Wire / DIII-Net	2 Wire / DIII-Net	Infrared	2 Wire / DIII-Net
°F/°C Selector	●	●	●	●	°F only	●
Display		Blacklight LCD Display	Multi-touch capacitive color display	Multi-touch capacitive color display		Backlight LCD Display
Room temperature display	●	●	●	●		●
Schedule and setback capabilities (with Time and Date display)	●	●	●	●		
User restriction options		●				●
On/Off, Operation mode, Set-point, Fan speed	●	●	●	●	●	●
Louver position adjustment	●	●	●	●	●	●
Reports system malfunctions	●	●	●	●	●	●
Space temperature sensor	●	●	●	●		●
Simultaneous operation with Daikin multi-zone controllers	●	●	Monitor only	Monitor only	●	●
Simultaneous operation with BACnet™ and LonWorks®	●	●	Monitor only	Monitor only	●	●
Group control capacity	Up to 16 indoor units*	Up to 16 indoor units	Up to 16 indoor units	Up to 16 indoor units	Up to 16 indoor units	Up to 16 indoor units

* with future software update

BRC1E73 - *Navigation* Remote Controller

The *Navigation* Remote Controller has been enhanced to meet the configuration requirements of Daikin's *VRV* indoor units. The BRC1E73 provides all the great features and options the market requires. The configurable display and operation buttons will provide as much or as little control as the project requires.

Features and Benefits

» Basic Operation

- On/Off, operation mode, set-point
- Up to 5 fan speeds selectable (enhanced)
- Airflow direction (enhanced)
- Individual louver airflow direction
- Dual airflow
- Auto-draft prevention (prevents air blowing directly on occupants)

» Function

- Configurable display — Detailed, Standard, and Simple
- Dual or single cool and heat set-points for occupied periods
- Independent setback set-points for unoccupied periods
- Automatic Setback by occupancy sensor
- Automatic Off by occupancy sensor
- Unwanted buttons/operation modes can be disabled
- Set-point range limitation
- Individual button prohibits/lockout
- Auto-changeover for Heat Recovery and Heat Pump systems with dual or single set-points
- Control Self-cleaning filter panel functions
- Automatic adjustment for Daylight Savings Time (DST) (enhanced)
- Built in 7, 5+2, 5+1+1, and 1 (everyday) schedule with up to 5 actions per day with independent cooling, heating and setback set-points

BRC1H71W - *Madoka* Remote Controller

» Easy Commissioning
- Settings and configuration can be copied to and from the app or controller and applied to other controllers using BLE technology
- Selective display mode: Text, Icon, and Scale display
- Field settings are categorized based on the application
- Language: English, French, Spanish
- Supports both Fahrenheit and Celsius

» Basic Control functions
- On/Off, operation mode, set-point
- Up to 5 fan speeds selectable
- Louver direction
- Auto-draft prevention

» Advanced functions
- Setback logic
- Set-point range limitation
- Function Prohibition

Madoka
Remote Controller

DTST-ONE-ADA-A - Daikin *One*+ Smart Thermostat for *VRV*, *SkyAir*, Single Zone and Multi-Zone System

» A cloud-connected smart thermostat to control indoor temperature, humidity, and air quality.

» Features
- Capacitive multi-touch display with easy rotational dial and light pipe indication
- Wi-Fi enabled smart thermostat with smartphone control, voice control and OTA update capability
- Intelligent energy management with schedule and configurable energy and comfort functions
- Auxiliary heater control (primary/secondary/emergency heat)

Daikin *One*+
Smart Thermostat

The Daikin *One* touch smart thermostat

» Simple, elegant industrial design
» Capacitive touchscreen user interface
» Wi-Fi-enabled smart thermostat with iOS and Android app control
» Voice control by Amazon Alexa and Google Assistant
» Technical Specifications
- Capacitive touch screen
- Backlit, 3.5 inch MVA TFT LCD display
- Wi-Fi
- Bi-directional communications protocol for controlling HVAC system

Daikin *One* Touch
Thermostat

Individual Controllers (cont.)

AZAI6WSCDKA - DKN Cloud Wi-Fi Adaptor

» Remote control of *VRV* indoor units from iOS/Android smartphone app

» Voice control capability through *Google Assistant* and *Amazon Alexa*

» Provides Cloud API integration option for hotel and home automation integration developers

» Features

- On/Off
- Mode
- Error alert
- Leveled user authority
- Set-point
- Fan speed
- Room temperature
- Louver position

DKN Cloud
Wi-Fi Adaptor

BRC4C82/BRC7E818/BRC7E83/BRC7E830 - Wireless Remote Controller

» The same operation modes and settings as with wired remote controllers are possible.

» Features

- On/Off
- Operation mode
- Single set-point
- Fan speed adjustment
- Louver position adjustment
- Reports system malfunctions

» A compact signal receiver unit (separate type) to be mounted into a wall or ceiling is included.

- The Ceiling Suspended and Wall-Mount indoor units use signal receivers that are mounted in the indoor unit.

* Wireless remote controller and signal receiver unit are sold as a set.

Wireless remote
controller*

Signal receiver unit
(separate type)*

Advanced Multi-Zone Controllers

DCM601B71 - *intelligent Touch Manager (iTM)*

The *intelligent Touch Manager (iTM)* is an advanced multi-zone controller that provides the most cost-effective way to control and monitor the Daikin *VRV* system.

Centralized and Advanced *VRV* Control

Up to 64 Indoor Unit Groups (128 actual Indoor Units) can be monitored and controlled with individual Cool and Heat Set-points, Set-point Range Limitation, Setback Set-points, and Auto changeover to meet your expectations and project requirements. Up to 512 Indoor Unit Groups (1024 actual Indoor Units) can be monitored and controlled with the addition of up to 7 optional *iTM* Plus Adaptors (DCM601A72).

Built-in Service Tool with Remote Access

- Operation data are stored in the *iTM* for the last 5 days:
  - Indoor unit and outdoor unit operation data
  - BACnet™ Client objects
  - WAGO® I/O system data
- Operation data can be exported through a USB drive or through the *iTM* web browser remotely
- BMS can monitor the *BACnet* objects of indoor unit and outdoor unit operation data with the *BACnet* Server Gateway Option activated

Ancillary Equipment Control

Integrates and/or interlocks sensors, switches, dampers, fans, pumps, and lighting with Daikin Indoor Units.

Web Access and Alert E-mail

Allows daily remote monitoring and control with the Web/E-mail function that can be accessed via the facility's Local Area Network or your Internet connection. Sends Error E-mail to mobile devices with the Web/E-mail function.

Tenant Billing

Determines energy consumption of shared condensing units based upon tenant (Indoor Unit) demand using the PPD Software option (DCM002A71).

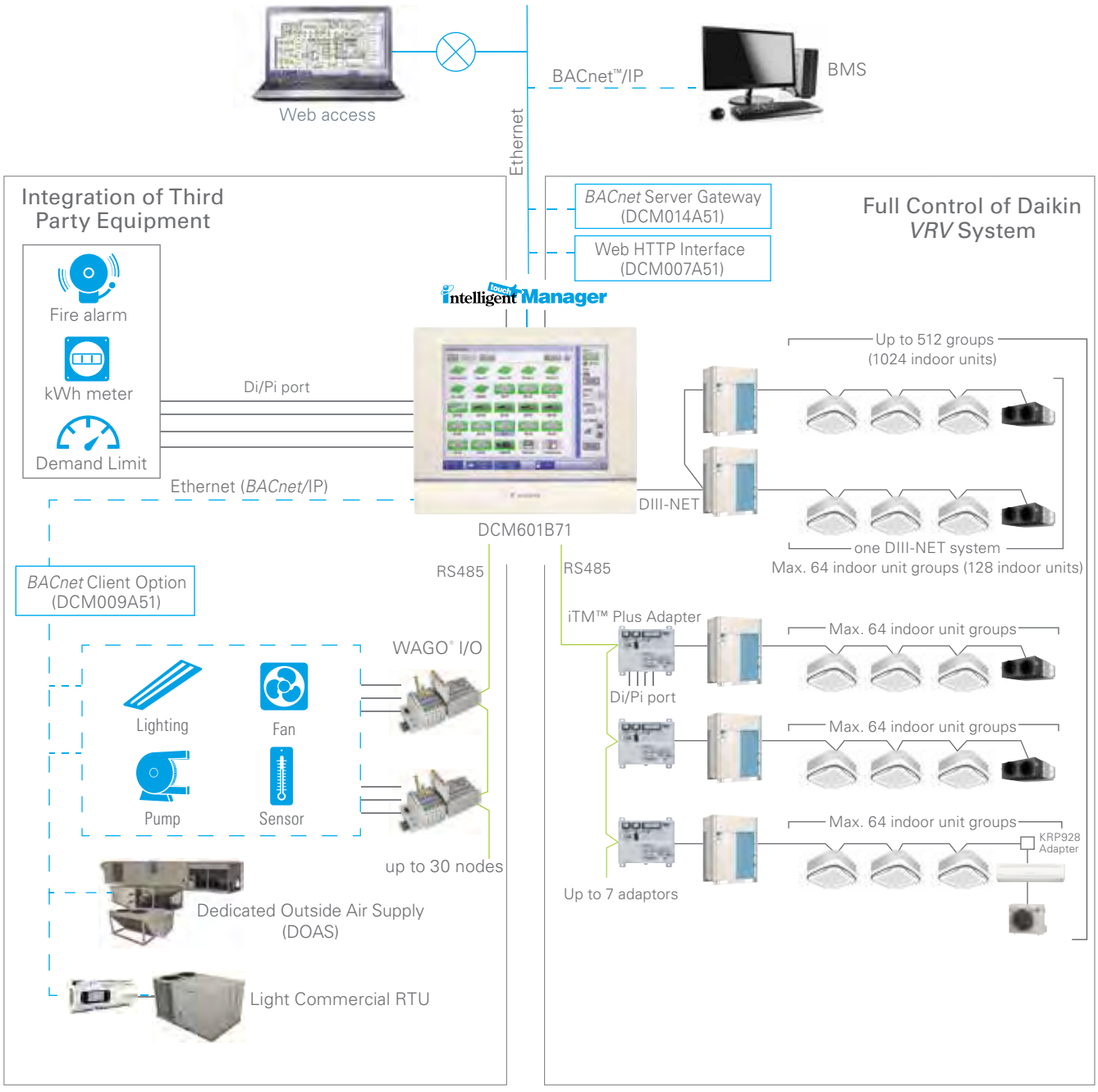
Features

- 10.4" LCD touch screen, USB drive
- Advanced, scalable and cost-effective management system
  - Up to 650 points (max 512 indoor unit groups (1024 indoor units)
  - Floor plan layout view

Functions

- Dual set-points or Single set-point in occupied or Setback in unoccupied
- Set-point Range Limitation
- Scheduling (7 day, Weekday-Weekend, Weekday-Saturday-Sunday, Everyday)

- Scheduling (7 day, Weekday-Weekend, Weekday-Saturday-Sunday, Everyday)
- Optimum Start and Timed Override
- Advanced Auto changeover
  - Applicable to both *VRV* Heat Pump and Heat Recovery systems
  - Fixed, Individual, Average and Vote methods
- Demand Response
  - Interlock the digital input signals to provide automatic demand control functions
  - Multiple demand control functions: Indoor unit set-point shift control, Indoor unit forced thermo-off, Indoor unit on/off control and Outdoor unit's capacity demand limit control
- *WAGO* I/O
  - Monitor and control 3rd party equipment with DI, DO, AI and AO signals
  - Up to 512 management points
  - Interlock function with indoor units and ancillary equipment
- Power Proportional Distribution Option (DCM002A71)
  - Calculates apportionment of outdoor unit's total power consumption to individual units on the system
- *iTM BACnet* Client Option (DCM009A51)
  - Enabling the *BACnet* Client option allows the *iTM* to use the *BACnet*/IP protocol
  - Allows for full monitoring and control of 3rd party *BACnet* capable equipment
  - Up to 512 *BACnet* management points
- *iTM BACnet* Server Gateway Option (DCM014A51)
  - Enable BMS to control indoor units and/or monitor outdoor unit operation via *BACnet*/IP (up to a total of 128 *BACnet* device IDs and 4000 *BACnet* objects)
  - Virtual router function embedded that enables individual and configurable *BACnet* device ID for each indoor unit group address and each outdoor unit.
- Web (HTTP) Interface Option (DCM007A51)
  - The *iTM* Web IF (HTTP) software provides a building automation system or a home automation system the ability to monitor and control the *VRV* indoor units over the HTTP protocol


Web access
BACnet™/IP
BMS
Ethernet
Integration of Third Party Equipment
BACnet Server Gateway (DCM014A51)
Web HTTP Interface (DCM007A51)
Full Control of Daikin *VRV* System
intelligent Touch Manager
Fire alarm
kWh meter
Demand Limit
Di/Pi port
Ethernet (*BACnet*/IP)
DCM601B71
DIII-NET
Up to 512 groups (1024 indoor units)
one DIII-NET system
Max. 64 indoor unit groups (128 indoor units)
RS485
RS485
BACnet Client Option (DCM009A51)
WAGO® I/O
Lighting
Fan
Pump
Sensor
up to 30 nodes
iTM™ Plus Adapter
Di/Pi port
Max. 64 indoor unit groups
Max. 64 indoor unit groups
Max. 64 indoor unit groups
KRP928 Adapter
Up to 7 adaptors
Dedicated Outside Air Supply (DOAS)
Light Commercial RTU

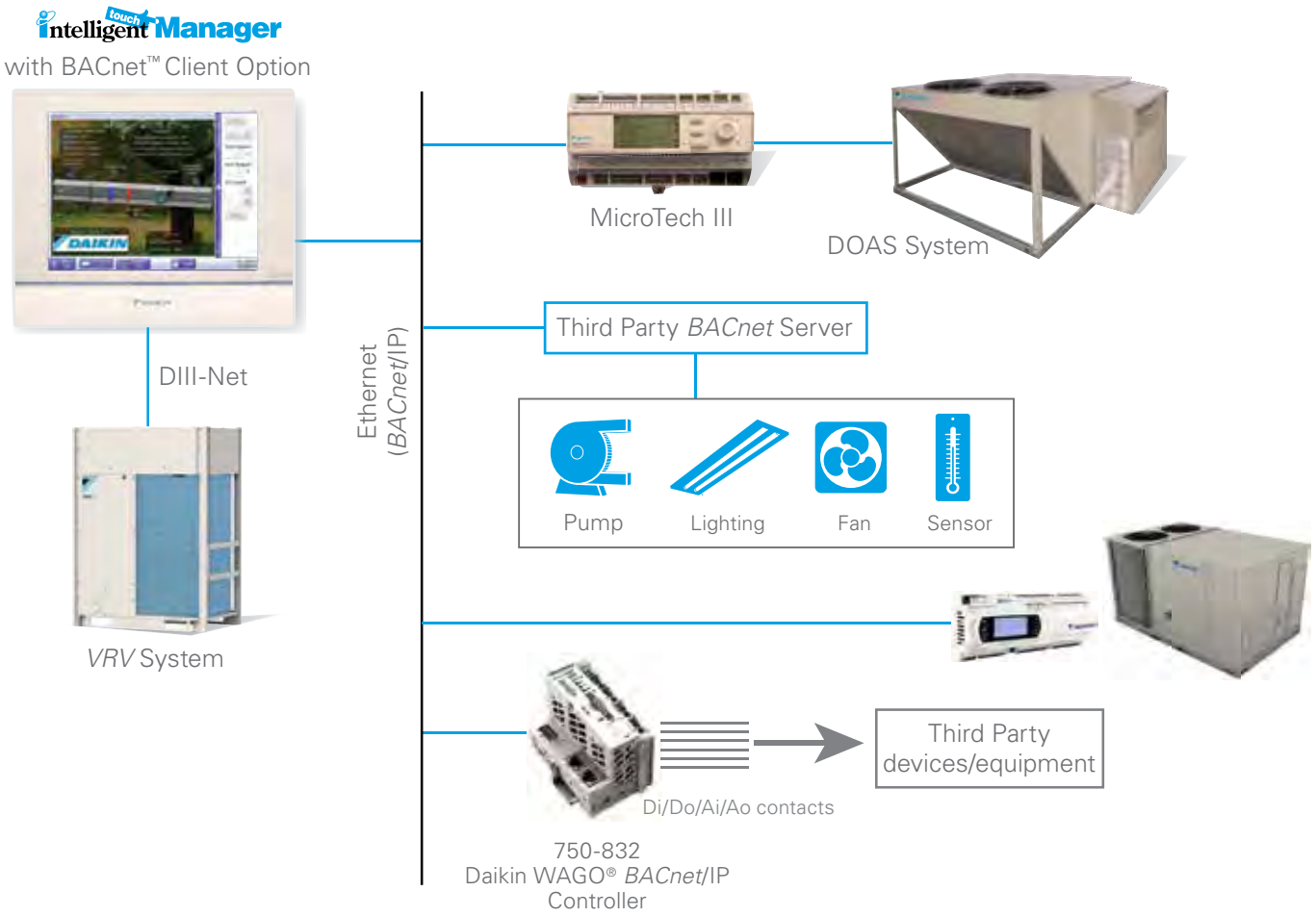
External Equipment Control

DCM009A51 - *iTM* BACnet™ Client Option

The *intelligent Touch Manager (iTM)* offers an advanced and cost-effective solution for Building Management Systems (BMS) applications. The *iTM BACnet* Client Option (DCM009A51) provides more flexibility to enhance the *iTM*'s function as a mini BMS. With this option, the *iTM* is able to manage DOAS systems and other third party equipment through the *BACnet*/IP protocol. By registering equipment connected to a *BACnet* server as management points in the *iTM*, you can now monitor and control the equipment via the *iTM*.

Features

- Cost- effective BMS solution
- Direct connection on *iTM* using the *BACnet*/IP Protocol
- Integrated control on Daikin *VRV* system and Daikin Applied System
- Monitors and controls third party equipment
- Easy commissioning with pre-engineering Preset Tool
- Easy monitoring with preconfigured GUI



Object Types

- Analog Input, Analog Output, Analog Value
- Binary Input, Binary Output, Binary Value
- Multi-State Input, Multi-State Output, Multi-State Value

Applications

- Simple I/O: Sensor, Pump, Light, Fan
- Multi-State Objects: AHU, Alarm, Elevator
- The *iTM* can integrate with the WAGO® *BACnet*/IP Controller (750-832) using the *BACnet* Client Server Option

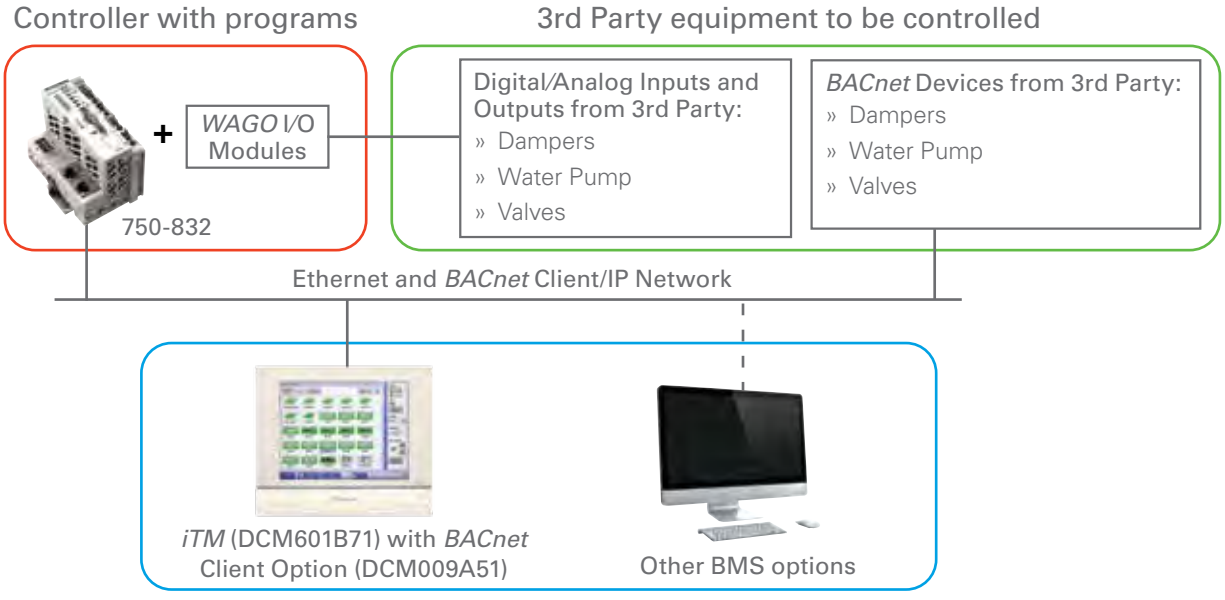
750-832 - Daikin WAGO® BACnet™/IP Controller

The Daikin *WAGO BACnet*/IP Controller (750-832) is a programmable controller that connects the *WAGO* I/O system to the *BACnet* protocol. This controller provides the three following functionalities:

- Native server: *BACnet* objects are generated automatically for the DI, DO, AI, AO modules that are connected to the controller.
- Application server: Other supported *BACnet* objects can be created via programming and made available to a *BACnet* network.
- Application client: Using the client functionality, *BACnet* objects and the properties of the external equipment can be accessed.

Daikin's *VRV* Marketing Controls Group will provide custom programming (programming) for applications where external equipment control is needed.

750-832
Daikin *WAGO BACnet*/IP Controller



Monitoring and Management Options

Interface Solutions

DKN Plus Interface

The DKN Plus Interface (AZAI6WSPDKC) enables the energy-efficient control of Daikin air conditioners by a third-party thermostat or an automation system. With this interface, third-party devices or systems can control the *VRV, SkyAir*, and Daikin Single/Multi-Zone indoor units through Cloud API, Modbus®, BACnet™ MS/TP, or thermostat relay contacts. This interface can be commissioned with ease through the DKN Cloud North America (NA) app via Bluetooth® Low Energy (BLE).

NORTH AMERICA

Features

» Versatile interface adaptor that can integrate with a third-party thermostat/BMS through multiple approaches:
- Cloud API
- *Modbus*
- *BACnet* MS/TP
- Backup thermostat G/Y/W (Fan/Cool/Heat) relay control through thermostat wire:
  - Automatically disables thermostat relay logic when cloud API connection detected
  - Advanced control logic to maximize indoor unit efficiency

» Easy commissioning with the BLE configuration app (DKN Cloud NA app)

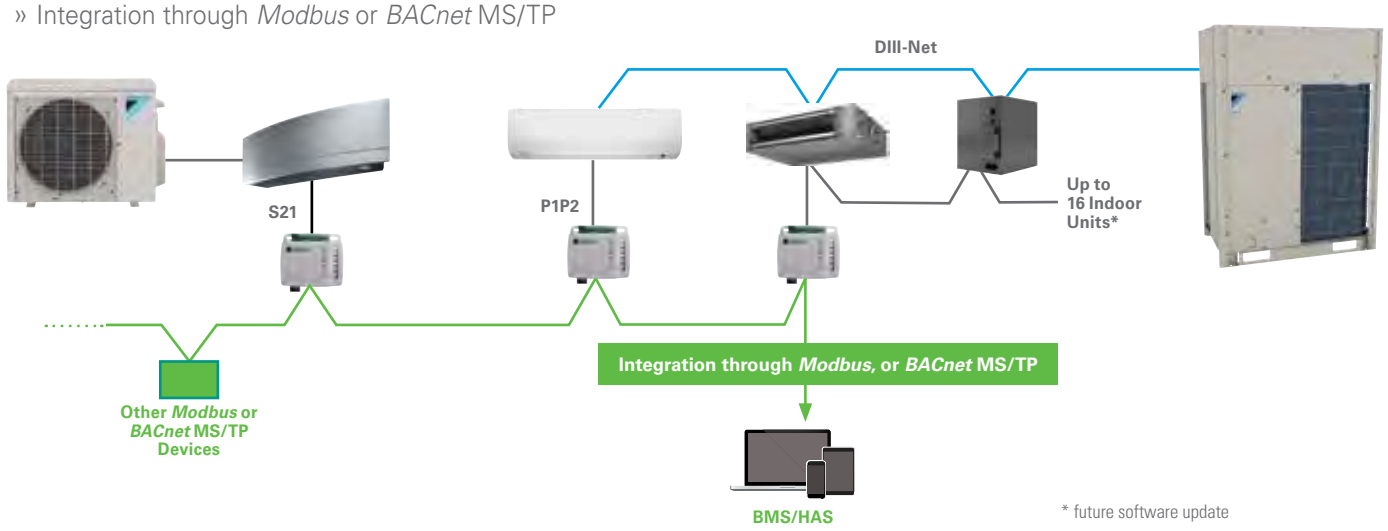
» Indoor unit control and monitoring points*
- On/Off
- Set-point
- Room temperature
- Mode (Auto, Cool, Heat, Fan, Dry)
- Fan speed
- Louver position
- Error code
- Interlock control with indoor unit On/Off

» Auxiliary Heater Control
- Auxiliary heater controlled as a secondary heat source

*Availability depends on indoor unit model

Integration with Building Management System (BMS) or Home Automation System (HAS)

» Integration through *Modbus* or *BACnet* MS/TP



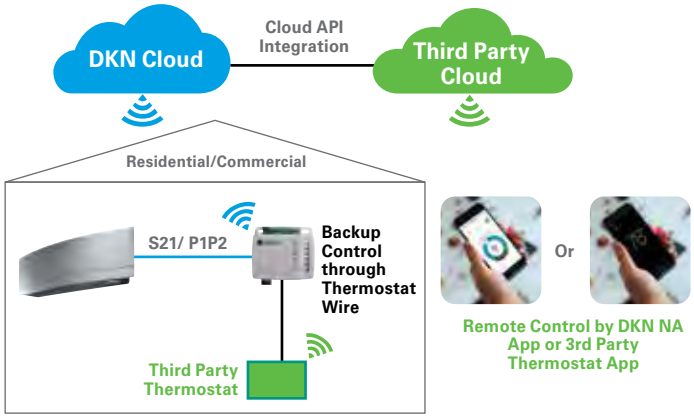
* future software update

System Diagram

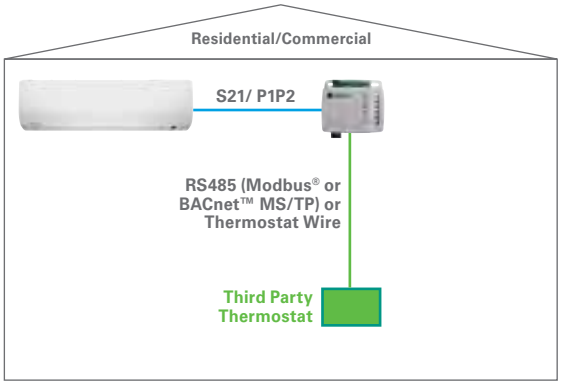
Integration with 3rd party thermostat

» The adaptor provides 4 different approaches for a 3rd party thermostat to control the Daikin indoor units

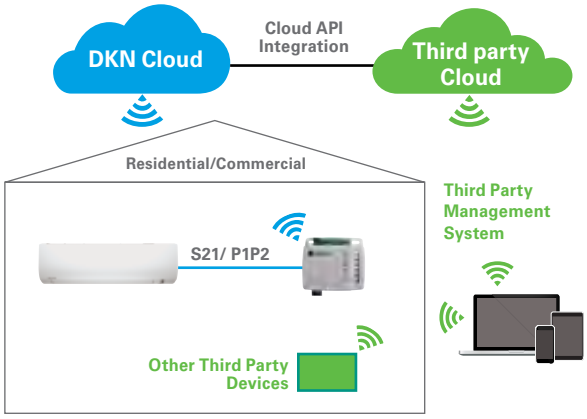
Integration with smart thermostats through 3rd party Cloud API



Integration with traditional thermostats



» Integration through Cloud API



Modbus is a registered trademark of Schneider Electric USA, Inc.

BACnet is a trademark of ASHRAE.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc., and any use of such marks are under license.

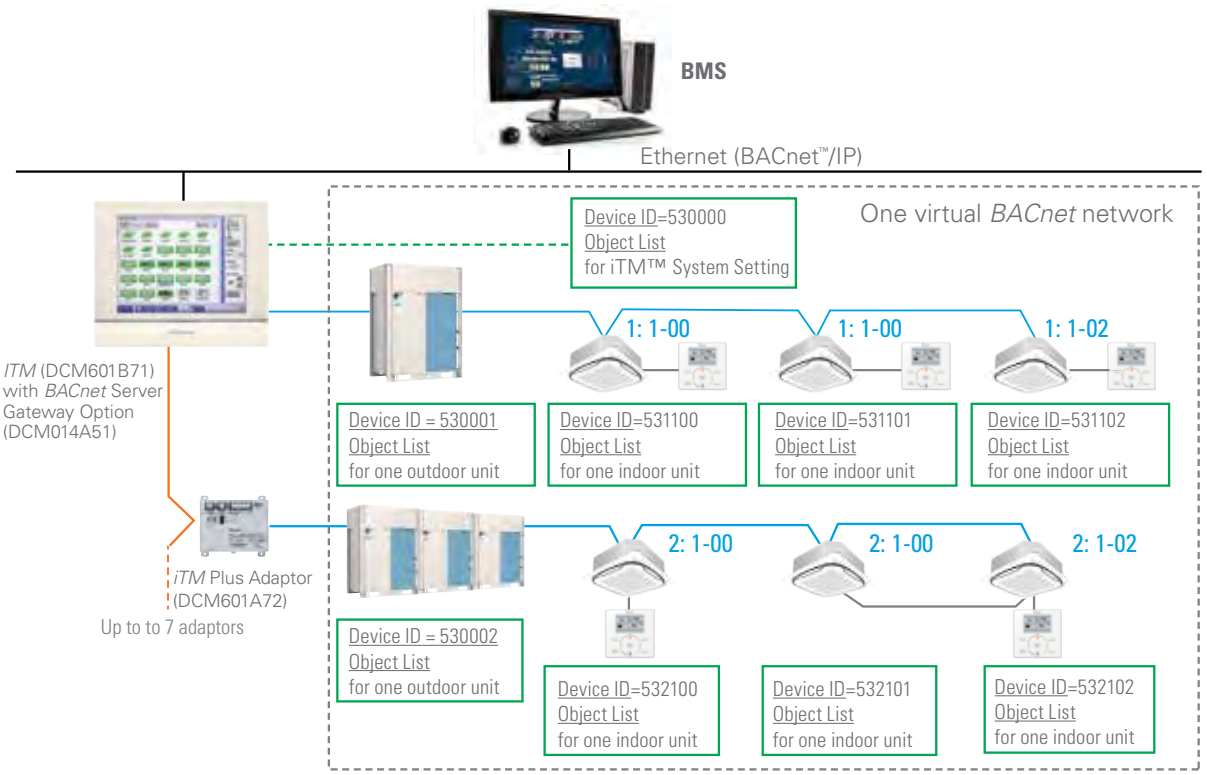
Interface Solutions (cont.)

DCM014A51 - *iTM* BACnet™ Server Gateway Option

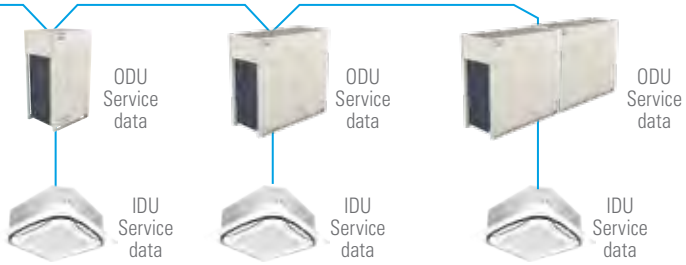
The *intelligent Touch Manager (iTM)* is capable of serving as a *BACnet* interface for Building Management System (BMS) integration. With the *iTM BACnet* Server Gateway Option (DCM014A51), the *iTM* provides BMS integrators with the ability to monitor and/or control the *VRV* indoor and outdoor units, eliminating the need for an additional hardware interface. Moreover, with the latest software update to the *iTM* 2+ (v2.06), the *iTM* is able to serve as a service tool to access indoor and outdoor unit operation data. With the *iTM BACnet* Server Gateway Option, the operation data points for both the IDU (indoor unit) and ODU (outdoor unit) are also available to the BMS through *BACnet*.

Features

- Additional service data points are now available*:
  - 6 new IDU service data points
  - 9 new common ODU service data points and 22 new service data points for each ODU module
- Direct connection on *iTM* using the *BACnet*/IP Protocol
- Supports Change of Value (COV) notifications to the BMS
- Configurable as a *BACnet* foreign device if a BBMD exist on a different subnet within a *BACnet* network
- *BACnet* virtual router function implemented:
  - Individual *BACnet* device ID assigned to each indoor unit group address and each outdoor unit
  - Indoor unit group names created in the *iTM* are visible on the BMS
- Easy commissioning using CSV file
  - Available objects can be configured for each indoor unit
- Independent heating and cooling set-points for occupied and unoccupied periods
- Individual min/max Set-point Range Limitation for heat and cool modes
- The *iTM*'s auto changeover, set-point range limitation, setback, dual set-point logic and schedule can be accessed by the BMS
- Up to 128 Device IDs (including both indoor units and outdoor units) and up to 4000 *BACnet* objects can be monitored and controlled by BMS.
  - When the IDU/ODU operation data is enabled a total of 128 devices and 4000 *BACnet* points are available
- Up to 7 *iTM* Plus Adaptors can be connected to an *iTM* for a total of 8 DIII-Net ports



Powerful Service Tool with Indoor and Outdoor Unit Operation Data Points



» When a problem occurs, the BMS integrators and Service Technicians can start troubleshooting remotely immediately before going to the site.

» Indoor and outdoor operation data trending* by Third party BMS can benefit the *VRV* service process.

*BMS programming needed

Enhanced BMS Integration Solution for Indoor Unit Operation

Individual Device instance number for each indoor unit (Configurable) → Device ID (1:1-00) = 531100 Device ID (1:1-01) = 531101

Object instance number repeated for every indoor unit point → Occupancy Mode = MO 1 (All indoor units)
Unit On Off Status = BI 2 (All indoor units)

Advanced *iTM* BACnet™ Server Gateway Points

BMS

iTM System Settings	Enable/disable *iTM* schedule operation	Schedule
	Enable/disable *iTM* auto changeover operation	Auto Changeover
	Timed override minutes	Timer Extension Minutes
	System forced off	Emergency Stop
Indoor Unit Operation and Monitoring	Occupancy mode (occ, unocc, standby)	On/Off
	Occupied cooling and heating set-point	Occupied Dual Set-point
	Unoccupied cooling and heating set-point	Setback Set-points
	Maximum and minimum cooling set-point	Set-point Range Limitation
	Maximum and minimum heating set-point	
	Minimum cooling and heating set-point differential	Min. Cool/Heat SP Differential
	Cooling and heating set-point tracking mode	Set-point Tracking Mode
	Remote control prohibit	Remote Controller Prohibit
	Timed override operation	Timer Extension
	Current unit operation (off, normal, override, setback)	And more basic functions...
	Forced indoor unit thermo-off	
	Indoor unit changeover option availability	
	Indoor fan status	
	and more basic operation and monitoring points...	

iTM Control Logic

Advanced Indoor Unit Operation

Interface Solutions (cont.)

DCM007A51 - *ITM* Web (HTTP) Interface Option

» Building or Home Automation Interface based on HTTP protocol

» Interface between the DIII-Net and the HTTP automation work station.

» Monitor and Control up to 512 Indoor units groups

DMS502B71 - Interface for use in BACnet™

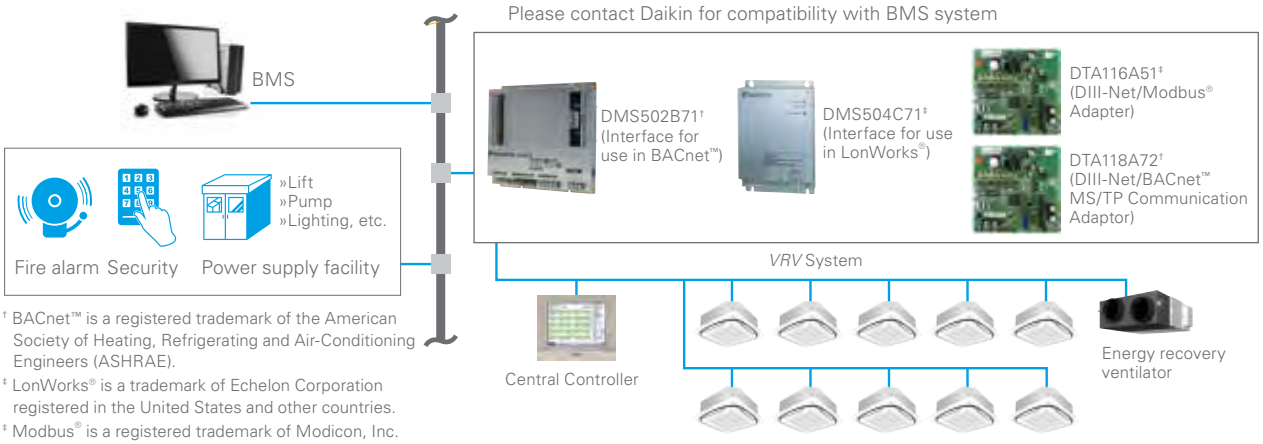
» *BACnet*: Building Automation and Control Networks
- Standard open protocol based on ANSI/ASHREA Standard 135

» Monitor/Control indoor unit's points

» Monitor/Control up to 256 indoor units groups (512 indoor units)

» Manage up to 4 DIII-Net systems
- Option Board (DAM411B51) required

BACnet, *LonWorks* and Modbus® Interface overview



† BACnet™ is a registered trademark of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

‡ LonWorks® is a trademark of Echelon Corporation registered in the United States and other countries.

‡ Modbus® is a registered trademark of Modicon, Inc.

DMS504C71 Interface for use in LonWorks®

» BMS interface based on LonTalk

» Interface between Daikin DIII-Net and BMS LonTalk work station
- Manages up to 64 indoor unit groups (128 indoor units)with network variables for each group
- Manages 1 DIII-Net system

» Lon Interface communicates over twisted pair wire

» External Interface File (XIF) documents device information available at www.daikinac.com

Daikin's *BACnet*, *LonWorks* and *Modbus* interface units provides control for all *VRV* systems.

DTA116A51 - DIII-Net *Modbus* Adaptor

» BMS interface based on *Modbus* (RS485)

» Gateway between Daikin DIII-Net and BMS *Modbus* workstation
- Manages up to 16 *VRV* indoor units connected to up to 2 outdoor units

» *Modbus* interface communicates via *Modbus* RTU

DTA118A72 -DIII-NET/*BACnet* MSTP Communication Adaptor

» The DIII-Net/*BACnet* MS/TP Communication Adaptor enables the connection of *VRV* systems to a compatible Building Management System (BMS).

» The adaptor operates as a *BACnet* router/gateway for the *VRV* system.

» With this adaptor, a third-party BMS can monitor the *VRV* indoor units and outdoor units, as well as control the *VRV* indoor units through the *BACnet* MS/TP protocol.

» The adaptor can be mounted to the *VRV* outdoor or indoor unit.

HERO Cloud Service and *HERO* Simple Edge

The Daikin *HERO* Simple Edge provides a connection of a Daikin *VRV** system to the *HERO* Cloud Services network for remote monitoring. The *HERO* Simple Edge is mounted onto the outdoor unit, and the built-in SIM card provides wireless connectivity.

Daikin *HERO* Cloud Services is a remote monitoring service for Daikin *VRV** systems. When integrated, data visualization of connected indoor and outdoor unit data and animated piping diagrams displaying operation status is provided. Daikin *HERO* Cloud Services also includes failure prediction for the compressors and sensors and refrigerant leak detection in the *VRV* system. In addition, *HERO* Cloud Services can help optimize the equipment operation based on outdoor ambient temperatures.

Elevate control through remote monitoring:

- **Time and cost-saving opportunities** – Helps reduce unnecessary truck rolls and expand awareness of potential system issues.
- **An owner-oriented design with a customizable dashboard** – Provides a quick overview of all connected sites and *VRV* systems.

HERO Cloud Services is based upon a recurring licensing fee to access site information. Licenses can be purchased in 1-year, 3-year, or 5-year increments, with no additional cost for the first-year access after the device, is activated.

*Compatible with select Daikin *VRV* models.
Please visit daikinac.com to learn more.

HERO Cloud Service and *HERO* Simple Edge (cont.)

Features and Benefits:

» Mounts to the outdoor unit using powerful Neodymium magnets.

» Powered by the outdoor unit and does not require separate power or panel build.

» The built-in cellular connectivity[1] provides a simple connection to the cloud without burdening the building network and without the addition of expensive network gateways.

» Connects directly to the Daikin *VRV** outdoor unit system without needing additional adaptors or centralized controllers.

» Simple device commissioning using a QR code.

System Capacity:

» A maximum of the one (1) Daikin VRV* outdoor unit system and its connected indoor units (up to 64) can be connected to the Simple Edge device.

» Multiple Simple Edge devices can be connected on a site.

» A single user account can monitor multiple sites.

[1] *HERO* Simple Edge uses cellphone communication. *HERO* Simple Edge cannot establish communication outside the service area, and it is possible, communication cannot be established even if installed within the service area but where cellphone signals are hard to reach, such as underground or on a high-rise building, etc.

*Compatible with select Daikin *VRV* models. Please visit daikinac.com to learn more.