REMOTE MONITOR INTERFACE (RMI)

CLOUD-BASED REMOTE MANAGEMENT AND SUPERVISOR SYSTEM FOR PROFESSIONAL USE

Discover the Cloud system by Mitsubishi Electric for professional use

The RMI system lets you control your air conditioning, heating and domestic hot water production system remotely from a smartphone, tablet or PC. The system may be used to monitor the performance of your appliances, programme functions, check consumption and view operating states to optimise the efficiency of the system.

Your perfect climate in an App!

The Mitsubishi Electric RMI app, available for iOS and Android devices, lets users control their air conditioning systems, view and manage hot and cold water production parameters and check for malfunctions.

ALL FROM AN APP ON YOUR SMARTPHONE OR TABLET.

- User interface with fresh, contemporary design
- Intuitive to use
- Select installation
- Block/floor view modes
- Collective control by block/floor
- Manage system functions
- Enable/disable user accessible functions
- View timer settings for group
- Energy consumption dashboard
- Energy consumption apportioning via app for each individual tenant

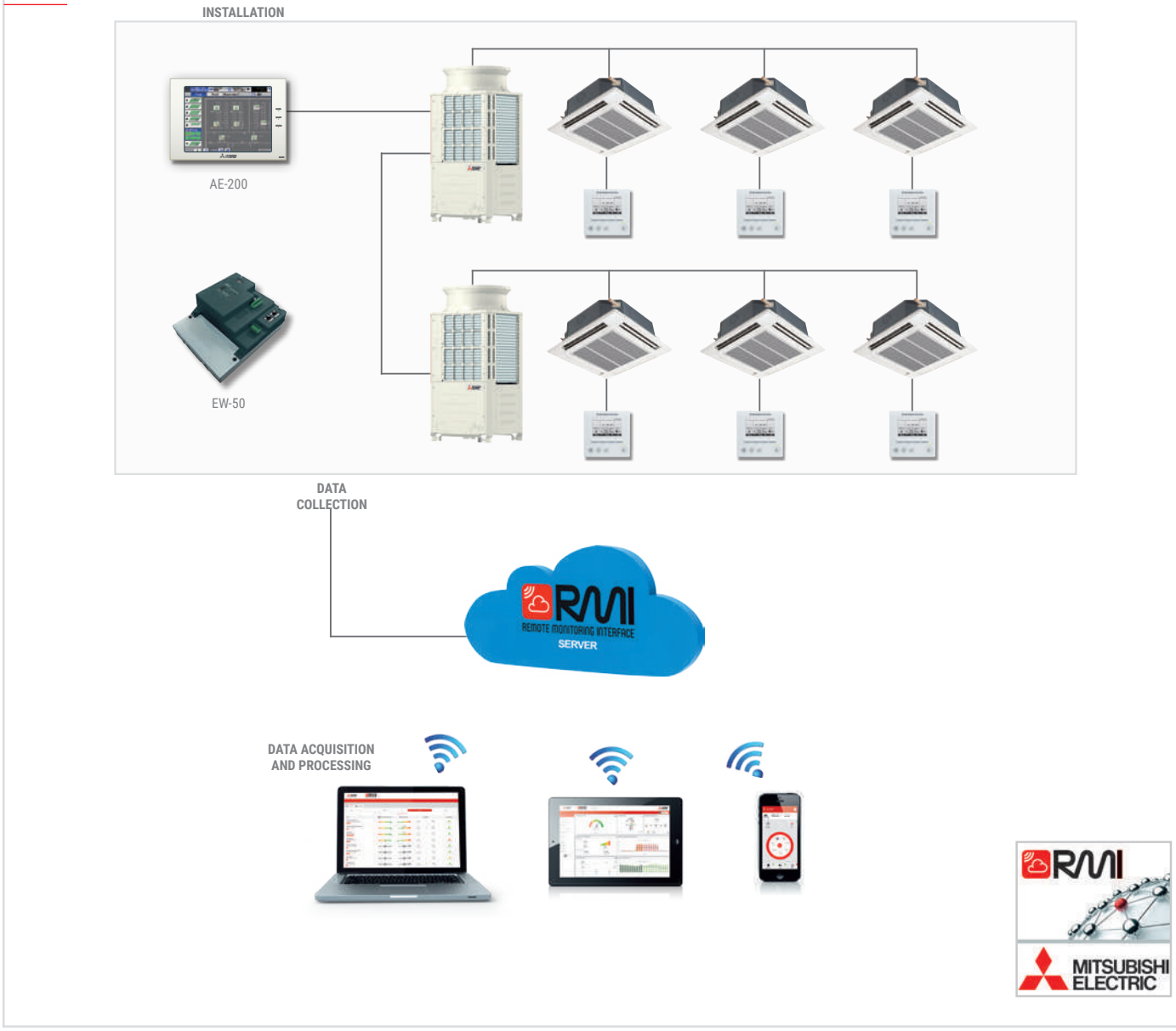
Control all your installations simply

Set weekly programmes and special events, and view and analyse the operating parameters of your system remotely from a mobile device with a graphic interface that lets you change settings instantaneously when needed.

System architecture

The WEB Server (AE200, EW-50) centralised controller performs the crucial role of acquiring and monitoring data via the M-Net data transmission bus linking all the components of the VRF CITY MULTI, Mr. Slim or Residential system. A router (available as wired ADSL or 3G Mobile versions) creates a secure, protected communication channel with the RMI Server. The modular flexibility of the RMI Server makes it possible to store enormous volumes of data, which is acquired, processed and archived for access from portable devices. This infrastructural complexity, combined with superior processing, management and security capabilities, is encapsulated in an extremely user friendly concept, to help users optimise the energy usage of their systems.

ARCHITECTURE



Management and monitoring

RMI allows all essential operations for managing air conditioning units to be carried out remotely. Users can switch units on and off, change operating mode and set temperature, fan speed and air flow direction.

These functions are available for individual units or groups of units of the same type.

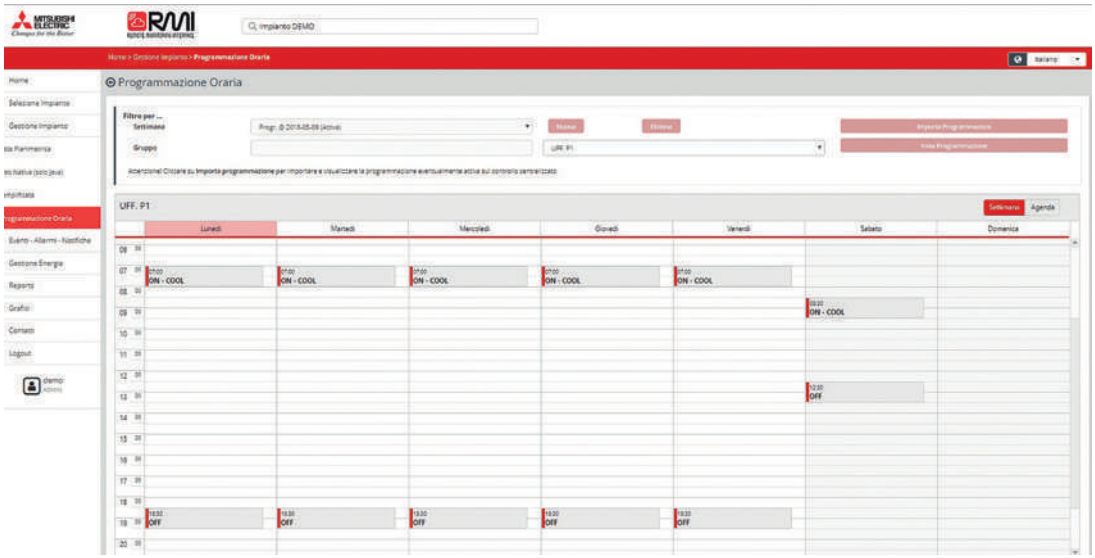
A number of system activity monitoring functions are also available, such as viewing hourly consumption.
The main screen contains an intuitive and immediately comprehensible summary of the activities of the installation.

The user may view graphs relative to consumption and external temperature, with the average for the period also displayed for comparison. A summarised report indicating current power demand and active faults can also be displayed.

DASHBOARD

The user may browse the functions of the menu to access specific functions for managing individual units or groups of units, and view and set operating parameters as required.
A timer function is available for programming weekly schedules for the installation. The time also includes options for setting an annual schedule and for defining special days throughout the year.
A timer schedule may be created from scratch from RMI and then either transmitted in cascade or exported to the centralised controllers in the installation.

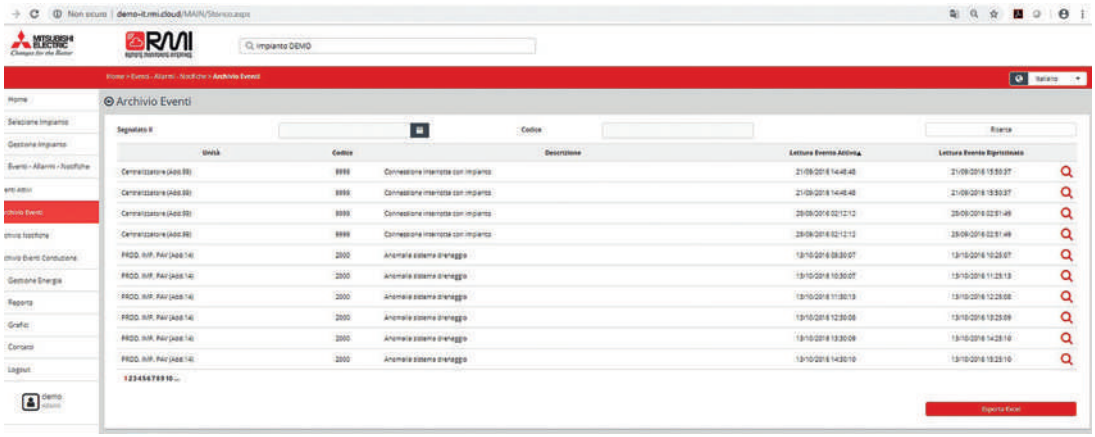
TIMER PROGRAMMING



Events - Alarms - Notifications

RMI displays any system malfunction states in real time. The user may use the specific menu to view details of the event remotely, with information on the units involved and the time of the event. A log maintains a permanent record of all past faults, and may be exported in Excel format for use by maintenance personnel.

EVENTS - ALARMS - NOTIFICATIONS

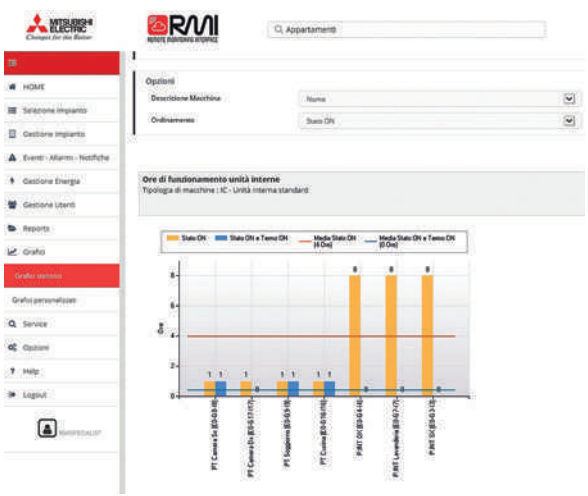


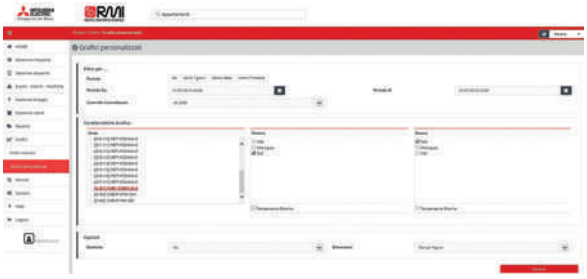
Graphs

One of the great strengths of the RMI platform is its ability to create a wide variety of graphs for analysing the performance and functions of the air conditioning installation. A tool available on the website and in the app lets users view and compare system operating parameters in choice of different graph formats. In addition to standard and simple to read statistical graphs, users can also generate custom line and bar graphs of parameters selected manually from those offered by the platform for comparison. The user can also define the time period represented in a graph and filter by type of unit.

This tool is helpful for any user who needs to keep the performance of the installation under close scrutiny in order to reduce energy consumption, and is particularly useful as a support tool for system administrators, designers, installers and maintenance technicians, which lets them offer the end user a system with even better efficiency and performance.

GRAPHS





RMI Service packages

RMI can also be applied to an existing VRF CITY MULTI system, by interfacing through the installation's existing WEB Server centralised controllers. Contact head office to check compatibility between hardware and available functions.

Find out more about the contracts available at the website:
http://rmiweb.mitsubishielectric.it/it/

Discover the capabilities of RMI with the demo available at:
http://demo-it.rmi.cloud

RMI IS AVAILABLE IN THE FOLLOWING PACKAGES

RMI SMART
REMOTE MONITORING INTERFACE

RMI ADVANCED
REMOTE MONITORING INTERFACE

RMI MULTI-TENANT
REMOTE MONITORING INTERFACE

RMI PLAN
REMOTE MONITORING INTERFACE

RMI CHARGE
REMOTE MONITORING INTERFACE

RMI SMART

The RMI SMART service/package, offered under license **with an annual** subscription **fee**, lets users manage air conditioning, heating and domestic hot water production systems:
- from Android or iOS smartphone and tablet mobile devices;
- via internet and/or over a local network, from the Web Client reserved area.

Users may download an app for the aforementioned iOS and Android devices free of charge from the respective on-line app stores. The RMI SMART service/package is compatible with **WEB Server G-50, GB-50, GB-50ADA, AG-150A and EB-50GU centralised controllers, and later controller models**. This means that it can also be used with existing VRF CITY MULTI systems that have already been in operation for some time.
When interfacing with an installation with a G-50, GB-50, GB-50ADA or AG-150A WEB Server centralised controller, it will **not** be possible to upgrade to the **RMI ADVANCED** package unless the existing WEB Server controller is replaced with a WEB Server AE-200 or EW-50 centralised controller (or later version) with a valid RMI PIN Code license.

Available functions
The RMI SMART service/package enables the following functions:
- manage ONE installation at a time (SINGLE INSTALLATION);
- manage installations remotely and in real time from the app;
- manage and control installations via the CLASSIC WEB interface (from WEB Client reserved area only);
- view active faults displayed in pop-up screens;
- configure 2 weekly timers for automatic seasonal changes;
- configure 1 annual timer for automatic management of special events;
- display geolocalised weather information.

RMI ADVANCED

The RMI ADVANCED service/package, offered under license **with an annual** subscription **fee**, lets users manage air conditioning, heating and domestic hot water production systems:
- from Android or iOS smartphone and tablet mobile devices;
- via internet and/or over a local network, from the Web Client reserved area.

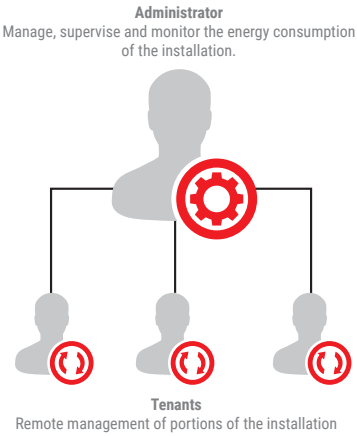
Users may download an app for the aforementioned iOS and Android devices free of charge from the respective on-line app stores. Users may access the remote management system included in the RMI ADVANCED service/package by simply connecting a **WEB Server AE-200, EW-50 or centralised controller (o later models)** which must be activated previously with the **RMI PIN Code license** to enable the function, to the internet.

Available functions
The RMI ADVANCED service/package enables the following functions:
- manage multiple installations with the same access credentials (MULTI-INSTALLATION);
- view a geolocalised map display of the installations (from WEB Client reserved area only);
- manage installations remotely and in real time from the app;
- manage and control installations via the CLASSIC WEB interface (from WEB Client reserved area only);
- view active faults displayed in pop-up screens;
- view fault log;
- configure 2 weekly timers for automatic seasonal changes;
- configure 1 annual timer for automatic management of special events;
- email and SMS fault notification messaging;
- view and download monthly functional/administrative graphs;
- generate, view and download monthly functional/administrative reports.

RMI MULTI-TENANT

The RMI MULTI-TENANT service/package, offered under license **with an** annual **subscription fee**, is an upgrade for the RMI-SMART and RMI-ADVANCED services/packages which enables MULTI-USER management. Specifically, this upgrade enables **Master** functions, allowing a system administrator to create and manage a number of sub-users (individual tenants) limited only by the number of terminal units installed, and assign sections of the installation and specific functions selectively to each.
Once the RMI MULTI-TENANT service/package is activated, access is enabled to the Reserved Area of the WEB Client, and the function "User Management", which is disabled without the upgrade, is visible among the functions available for the selected RMI package (RMI SMART or RMI ADVANCED). The functionality for defining sub-users is not available in the app for smartphones and tablets.

Available functions
The RMI MULTI-TENANT service/package enables the following functions:
- User Profile: set user name and password for exclusive access;
- User identification details;
- Contact details;
- Functions assigned to user, allocated with the following parameters and information:
  - Default site definition;
  - Date of expiry of access rights, which may not be after date of expiry for MASTER user;
  - List of permitted functions for user profile, selectable by MASTER user;
  - Portion of installation assigned to (and visible to) user.

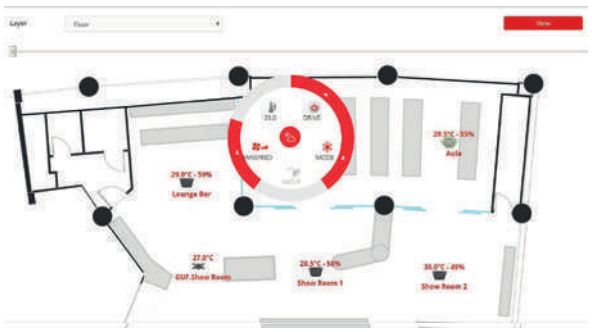


RMI PACKAGES AND FUNCTIONS	
PACKAGE	COMPATIBLE CENTRALISED CONTROLLERS
RMI SMART	G-50 GB-50 GB-50ADA AG-150 EB-50U EW-50 AE-200
RMI ADVANCED	EW-50 AE-200
RMI MULTI-TENANT	G-50 GB-50 GB-50ADA AG-150 EB-50U EW-50 AE-200

RMI PLAN

RMI PLAN lets users load, position and configure a number of zoomable installation layout map views. The icons representing indoor units are interactive. Clicking any of these icons lets the user modify the operating status and parameters of the unit (ON/OFF, setpoint, mode, fan speed etc.). This makes the entire architecture of the installation simpler and more immediate to understand and manage, and is especially useful for very large and complex systems.

INSTALLATION LAYOUT MAP



RMI CHARGE

Energy consumption monitoring and apportioning system

Available as RMI CHARGE and RMI CHARGE+PLAN variants, the RMI cloud-based energy consumption monitoring and apportioning system is based on the proprietary Mitsubishi Electric calculation and apportioning method. All the elements in the installation may be grouped in "energy blocks" during the configuration of the supervisor system. The consumption monitoring and apportioning system continuously analyses the operating parameters of the elements in the installation, acquiring and processing data from the installation to produce energy consumption tables for the different users.

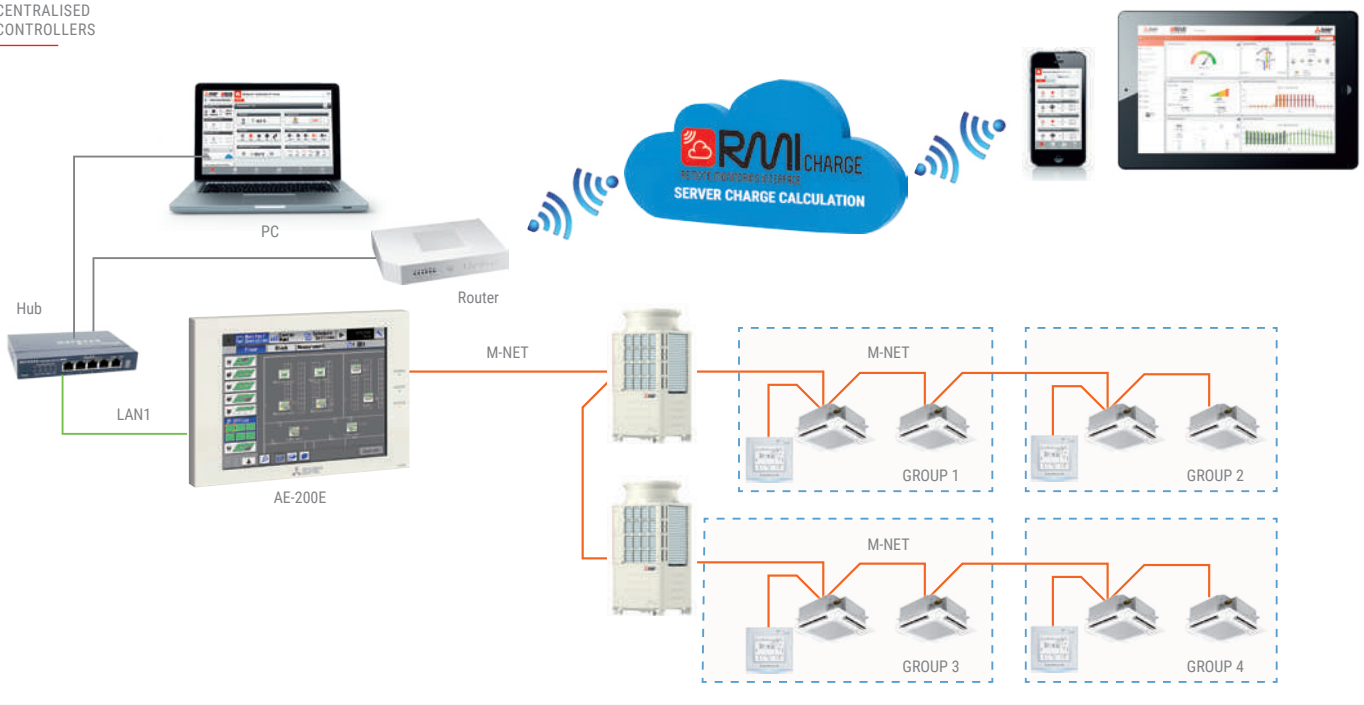
Each element in the system is associated with its electrical characteristics, which are used to process the data acquired and calculate consumption. In addition to the consumption of the indoor units making up the individual energy blocks, the software also considers the influence of the indoor units on the energy consumption of the respective outdoor units. The consumption calculated for each user includes the consumption of the respective indoor units and the applicable proportion of the energy consumption of the relative outdoor unit, calculated in consideration of several factors such as operating temperatures (settings and measured values), LEV electronic valve aperture, electrical characteristics and unit operating times.

The RMI CHARGE cloud based consumption monitoring and apportioning system is compatible with:
- VRF / HVRF CITY MULTI systems;
- COMMERCIAL line products, if connected to WEB Server 3D centralised controllers via specific interfaces;
- RESIDENTIAL line products, if connected to WEB Server 3D centralised controllers via specific interfaces;

Characteristics
- Cloud based solution. Reliable and always available;
- DOES NOT need space for additional installation components or a dedicated PC;
- Installable and configurable remotely;
- Ensures extraordinary flexibility for the simultaneous monitoring and management of multiple installations from a single point;
- Automatically generated ready-to-use monthly reports for each energy block;
- Filter functions (yesterday/last 7 days/last month/last quarter/user-defined) for viewing and exporting energy consumption apportioning data
- Energy consumption may be apportioned automatically or with manually entered data;
- Consumption calculated as percentage of total to three decimal places;
- Data storage: 1 year.

In order to use the RMI CHARGE cloud based consumption monitoring and apportioning system, the centralised controllers, meter acquisition interfaces and the RMI Box (router) in the installation must be connected to each other over a LAN Ethernet network, and the RMI Box must be connected to the internet, either by a cable or Wi-Fi link to the data line of the client, or via a mobile data network (with a 3G SIM card enabled for data).
RMI CHARGE can automatically acquire readings via PI (Pulse Input) interfaces from appropriately installed, connected and configured meters for electrical power (kWh), volume (m3) or thermal energy (kJ or thermal kWh) consumption.

CENTRALISED CONTROLLERS



The RMI CHARGE cloud based system is capable of acquiring, calculating and apportioning consumption of the following energy utilities:
• Air heating/cooling
• DHW (domestic hot water) production
• Water heating/cooling

In the case of DHW production and water heating/cooling, the RMI system may also be interfaced with and monitor the production of third party generators (e.g. Ecodan, heat pumps, chillers etc.).
RMI CHARGE automatically generates read-to-use monthly reports. Energy consumption data may be viewed and exported in three modes, with the percentage energy consumption of each energy block relative to total energy consumption available in all three modes:
• Electrical consumption (total and for each energy block) in kWh (for all utilities monitorable with RMI CHARGE);
• Domestic hot water consumption (total and for each energy block) in cubic metres;
• Water consumption for cooling/heating (total and for each energy block), in thermal energy units (kJ or thermal KWh).

Filter functions (yesterday/last 7 days/last month/last quarter/user-defined) for viewing and exporting energy consumption apportioning data.

Energy consumption apportioning in kWh

This consumption apportioning method indicates the consumption of each user in kWh.
Energy consumption apportioning in kWh is available for the outdoor units of the installation and, where all indoor units share the same power line, also for indoor units.
If electric power consumption is not acquired automatically from electric power meters connected to the system, the electric power consumption values for the outdoor units must be entered manually by the user in the RMI Cloud system to permit consumption apportioning.
If electric power meters are connected to the system via PI interfaces, the electric power consumption values for the outdoor units will be acquired automatically by the RMI Cloud system on a daily basis and used to calculate consumption apportioning.

Apportioning of domestic hot water (DHS) consumption and/or consumption of water for heating/cooling

To permit apportioning, a meter must be installed for each individual user billable for separate energy utility usage.
If consumption is not acquired automatically from water volume meters and/or thermal energy meters connected to the system, the water and thermal energy consumption values for the outdoor units must be entered manually by the user in the RMI Cloud system to permit consumption apportioning.
If water volume meters and/or thermal energy meters are connected to the system via PI interfaces, the water and thermal energy consumption values for the outdoor units will be acquired automatically by the RMI Cloud system on a daily basis and used to calculate consumption apportioning.

CONSUMPTION APPORTIONING