

Accessories

# Control systems

Modbus interface - RTD

- » Integration of Daikin portfolio in BMS system via modbus
- » Indoor unit control via 0~10 volt, dry contact or resistance contact
- » Retail applications
- » Hotel applications
- » IT applications
- » Heating interlock
- » Alarm signal



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RTD

# Integration of RA, Sky Air, VRV, Daikin Altherma Flex and AHU in BMS or home automation systems



## RTD-RA

- › Modbus interface for monitoring and control of residential indoor units

## RTD-10

- › Advanced integration into BMS of Sky Air, VRV, VAM and VKM through either:
  - Modbus
  - Voltage (0-10V)
  - Resistance
- › Duty/standby function for server rooms

## RTD-NET

- › Modbus interface for monitoring and control of Sky Air, VRV, VAM and VKM

## RTD-HO

- › Modbus interface for monitoring and control of Sky Air, VRV, VAM and VKM
- › Intelligent hotel room controller

## RTD-20

- › Advanced control of Sky Air, VRV, VAM/VKM and air curtains
- › Clone or independent zone control
- › Increased comfort with integration of CO<sub>2</sub> sensor for fresh air volume control
- › Save on running costs via
  - pre/post and trade mode
  - set point limitation
  - overall shut down
  - PIR sensor for adaptive deadband

## RTD-W

- › Modbus interface for monitoring and control of Daikin Altherma Flex Type, VRV HT hydrobox and small inverter chiller

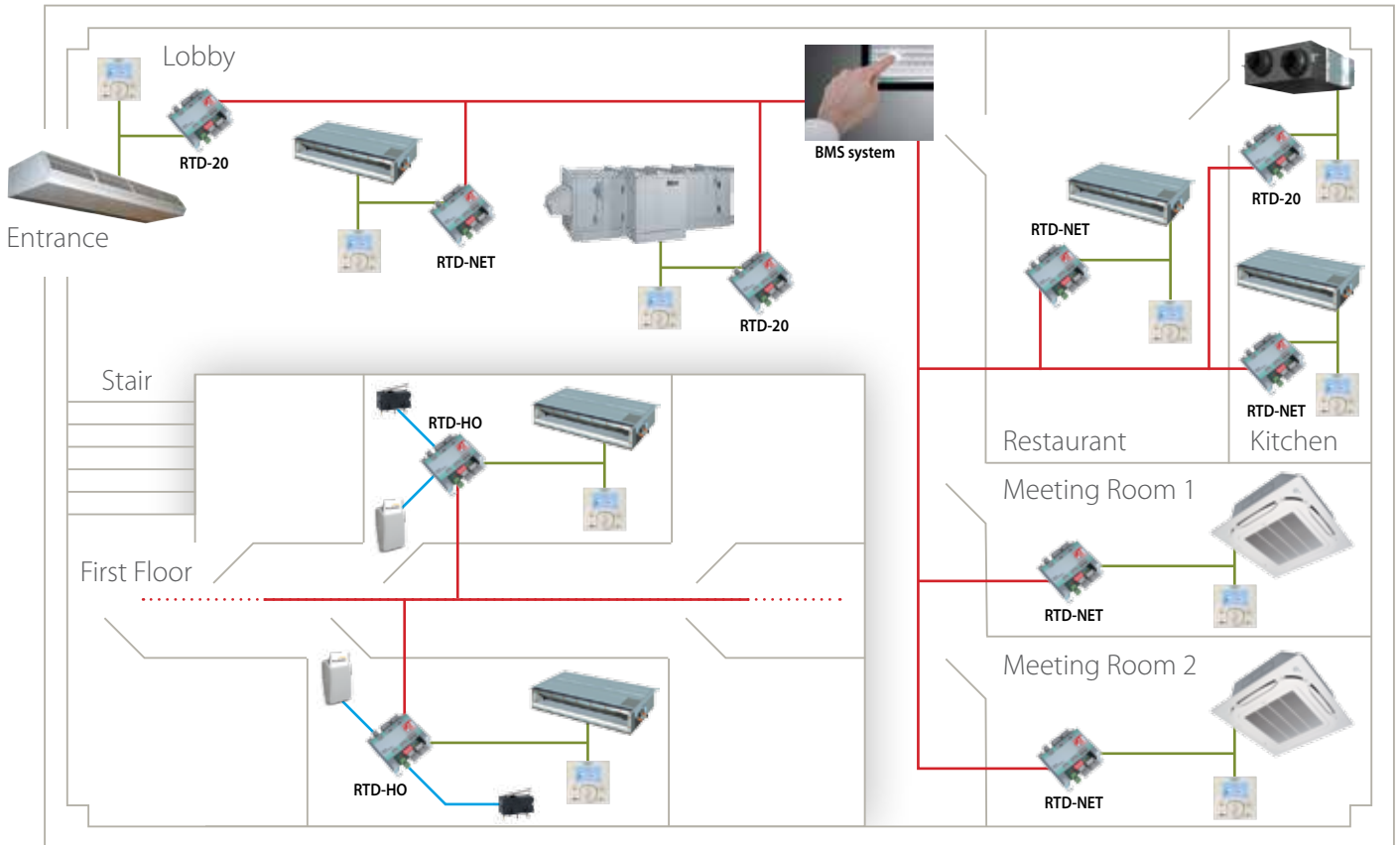
## RTD-LT

- › Modbus interface for monitoring and control of Daikin Altherma low temperature (EHVH(X)-C / EHBH(X)-C)
- › Voltage and resistance control
- › Photovoltaic operation signal for energy saving

# Concept

- > Full integration of entire product portfolio, allowing easy and central control of your entire commercial space
- > Full flexibility (access to all main functions) (ON/OFF, mode, setpoint, fan speed, error... )
- > Dedicated pre-programmed functions optimized for hotels, shops, server rooms, ...

HOTEL GROUND FLOOR



## RTD-RA

Application: Integration of Split units in BMS system

- > Modbus RTU RS485 for Splits
- > Harmonized Modbus registers with RTD line-up
- > Control prohibition from the R/C
- > IT application together with RTD-10
- > Group control (clone from master RTD)
- > Energy saving with PIR & Di connection

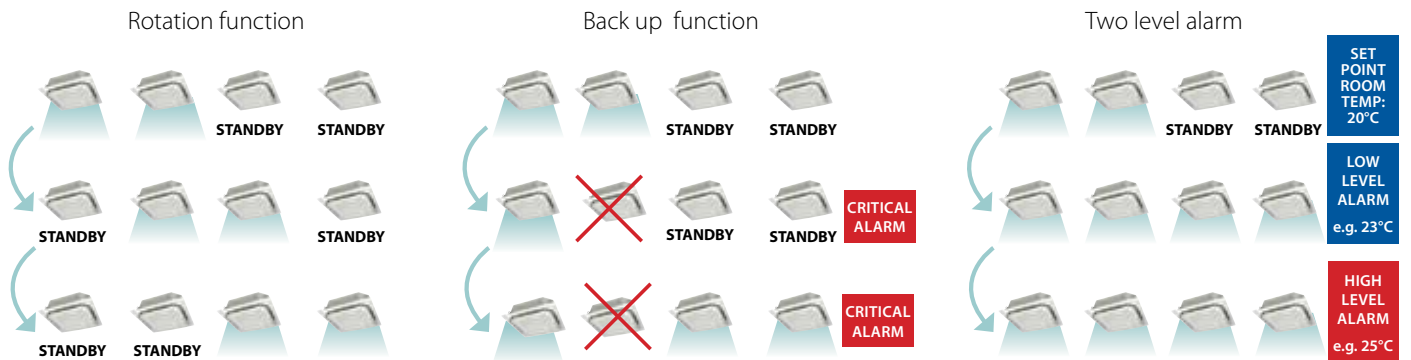


# RTD-10

## Application: Duty/standby function for server rooms

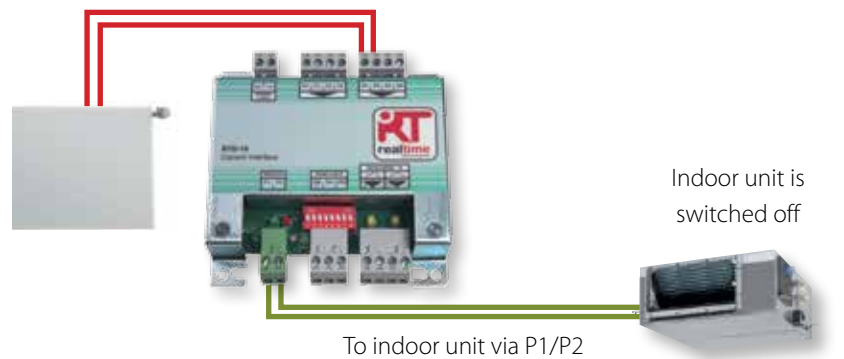
Suitable for IT and Telecom applications.

- > Rotation function:
  - Up to 8 duty/standby groups
  - 1 or 2 standby units
  - Daily, Weekly or Multi-week duty rotation
  - Optional thermistor space temperature alarm
- > Back up function
- > Two level alarm on high temperature or unit fault



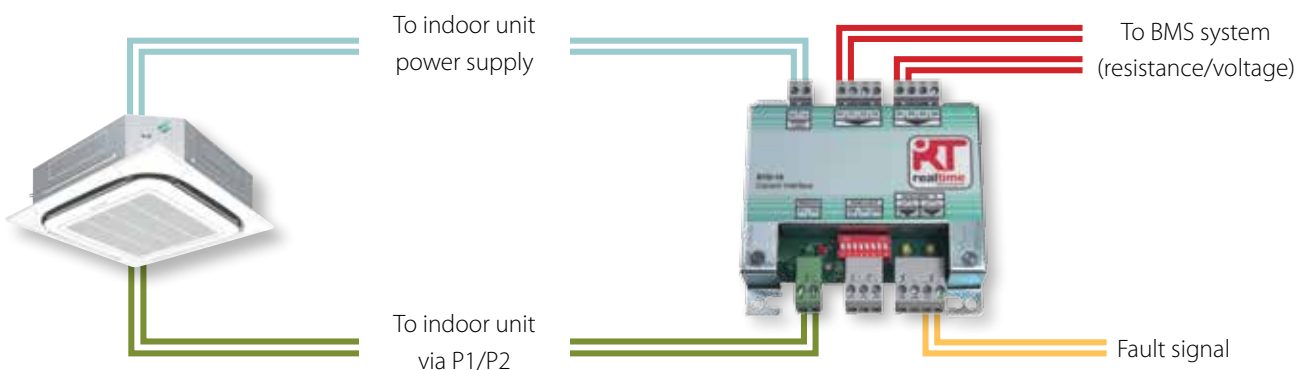
## Application: Heating interlock of air conditioning with central heating

- > Avoids having simultaneous cooling and heating occurring when a separate heating system is installed
- > The setting of the interlock function offers several possibilities on the indoor unit: to block certain functions, to switch it off or to change the mode to fan only



## Application: Integration in BMS system

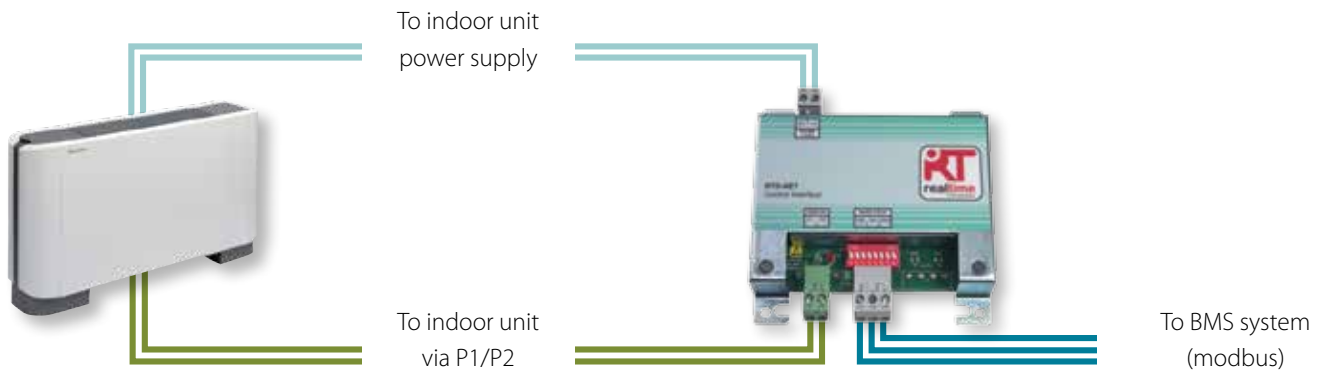
- > Integration in BMS system via resistance and/or voltage control



# RTD-NET

Application: Integration in BMS system via Modbus control

- › Integration in BMS system via Modbus

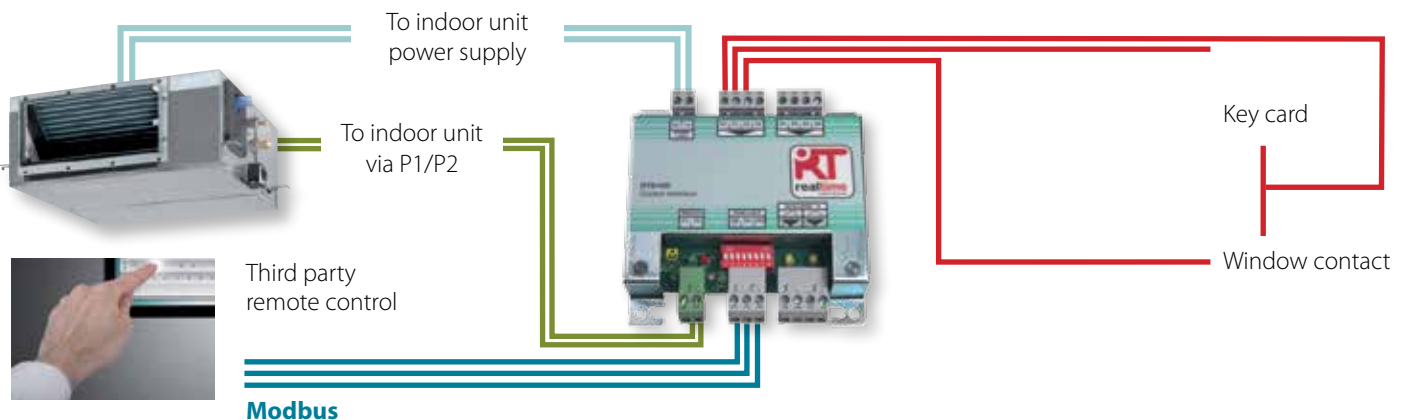
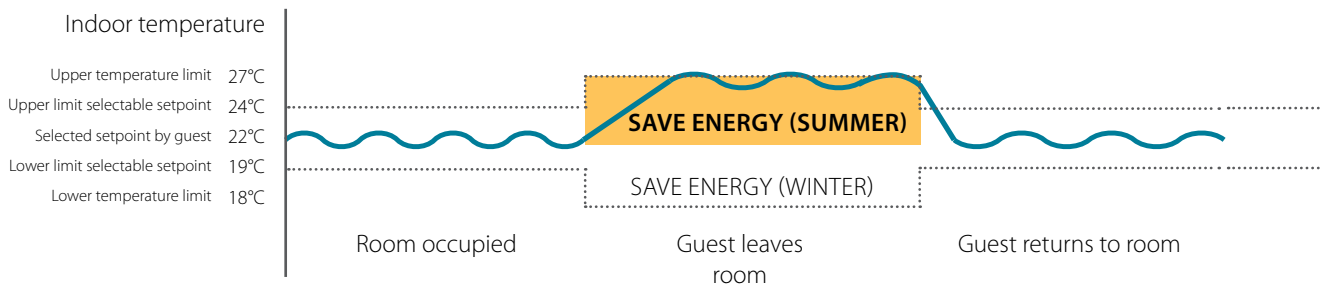


# RTD-HO

Application: Hotel room

- › Interlock with key card
- › Interlock with window contact
- › Control via third party remote control
- › Limit selectable setpoint (e.g. between 19 and 24°C)
- › Prohibit several remote control settings like indoor unit on/off, indoor unit mode ...

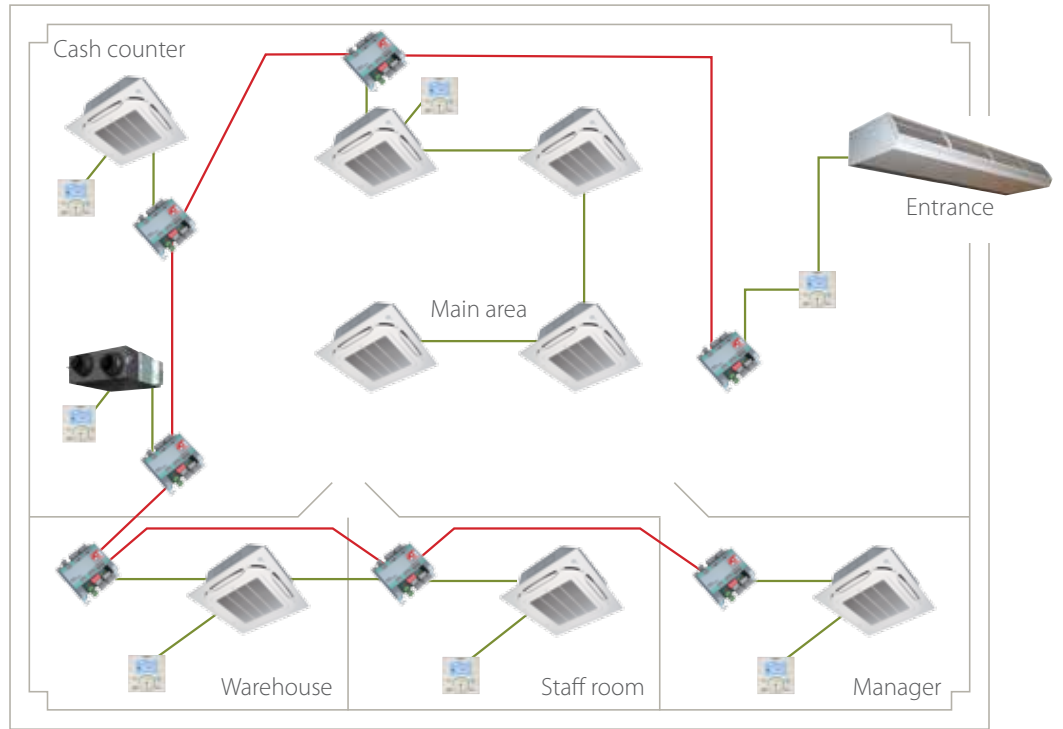
Example with keycard connection (cooling)



# RTD-20

## Application: Retail shop

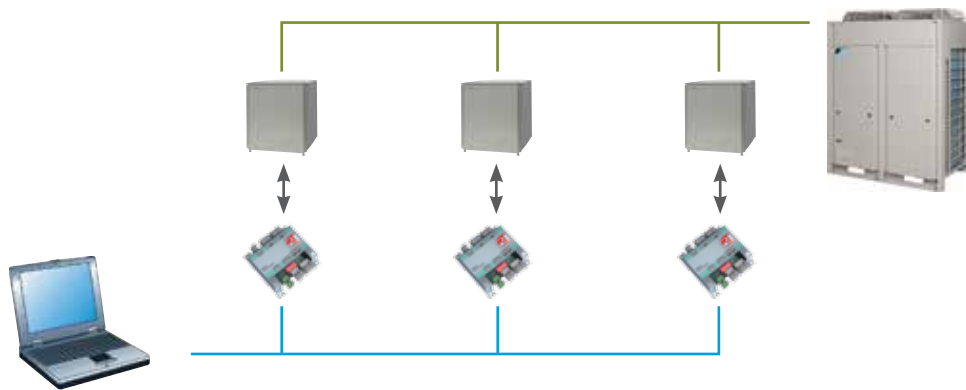
- > Operation management of retail shops zone
- > Energy saving functions
- > Flexible partition modes
- > Enhance the BMS integration of:
  - Air curtains
  - VAM
  - ERQ with 0-10V controls



# RTD-W

## Application: Integration of the domestic hot water (HT hydrobox) through Modbus

- > Modbus RTU RS485 for the HT hydrobox operation
- > I/O for the monitoring & the control of the HT hydrobox operation
- > Offer the platform for the integration with commercial heating sequence controller

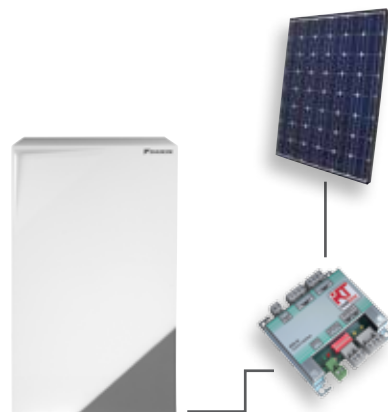


# RTD-LT

## Application: Integration of Daikin Altherma low temperature with photovoltaic solar collectors

Enhance the energy saving of Daikin Altherma low temperature through the smart combination of photovoltaic connection

- > Modbus interface for monitoring and control of Daikin Altherma low temperature (EHVH(X)-C / EHBH(X)-C)
- > Voltage and resistance control
- > Photovoltaic operation signal to save on energy costs



# Overview functions



MAIN FUNCTIONS			RTD-RA	RTD-NET	RTD-10	RTD-20	RTD-HO	RTD-W	RTD-LT/CA
Dimensions	H x W x D	mm	80 x 80 x 37,5			100 x 100 x 22			
On/off prohibition							✓		
Key card + window contact							✓		
Set back function			✓				✓		
Prohibit or restrict remote control functions (setpoint limitation, ...)			✓	✓	✓	✓**			
Modbus (RS485)			✓	✓	✓	✓	✓	✓	✓
Dry contact control								✓	✓
Group control			✓(1)	✓	✓	✓	✓		
0 - 10 V control					✓	✓			
Resistance control					✓	✓			
IT application			✓		✓				
Heating interlock					✓	✓			
Output signal (on/defrost, error)					✓	✓****	✓	✓	✓
Space heating / cooling operation								✓	✓
Domestic hot water control								✓	✓
Retail application						✓			
Partitioned room control						✓			
Air curtain				✓***	✓***	✓			
Smart grid control									✓

(1): By combining RTD-RA devices

CONTROL FUNCTIONS	RTD-RA	RTD-NET	RTD-10	RTD-20	RTD-HO	RTD-W	RTD-LT/CA
On/Off	M	M	M,V,R	M	M*	M,C	M,C,V,R
Room temperature setpoint	M	M	M,V,R	M	M*	M	M
Set point leaving water temperature (heating / cooling)						M,V	M,V,R
Operation mode	M	M	M,V,R	M	M*	M	M,V,R
fan	M	M	M,V,R	M	M*		
Louver	M	M	M,V,R	M	M*		
HRV Damper control		M	M,V,R	M			
Prohibit/Restrict functions	M	M	M,V,R	M	M*		
Forced thermo off	M						
Domestic hot water On							M,V,R
Domestic Hot Water reheat						M,C	M
Domestic hot water reheat setpoint							M,V,R
Domestic Hot Water storage						M	
Domestic hot water booster setpoint							M
Quiet mode						M,C	M,C
Weather dependent setpoint enable						M	M
Weather dependent curve shift						M	M
Fault/pump info relay choice							R
Control source prohibition						M	M

MONITORING FUNCTIONS	RTD-RA	RTD-NET	RTD-10	RTD-20	RTD-HO	RTD-W	RTD-LT/CA
On/Off	M	M	M	M	M	M,C	M,C
Room temperature setpoint	M	M	M	M	M		M
Set point leaving water temperature (heating/cooling)						M	M
Operation mode	M	M	M	M	M		M
Domestic Hot Water reheat						M	M
Domestic Hot Water storage						M	M
Number of units stored in the group						M	
Average leaving water temperature						M	
Remocon room temperature						M	M
fan	M	M	M	M	M		
Louver	M	M	M	M	M		
RC temperature		M	M	M	M		
RC mode		M	M	M	M		
nbr units		M	M	M	M		
Fault	M	M	M	M	M	M,C	M,C
Fault code	M	M	M	M	M	M	M
Circulation pump operation						M	M,C
Flow rate							M
Solar pump operation							M
Compressor status						M	M
Desinfection operation						M	M
Setback operation						M	
Return air temperature (Average /Min/Max)	M	M	M	M	M		
Filter alarm		M	M	M	M		
Termo on	M	M	M	M	M		
Defrost		M	M	M	M	M	M
Hot start							M
Booster heater operation							M
3-way valve status							M
Coil In/Out temperature	M	M	M	M	M		
Pump running hours accumulated						M	M
Compressor running hours accumulated							M
Actual leaving water temperature						M	M
Actual return water temperature						M	M
Actual DHW tank temperature (*)						M	M
Actual refrigerant temperature							M
Actual outdoor temperature						M	M

M : Modbus / R : Resistance / V : Voltage / C: Contact

\* : only when room is occupied / \*\* : setpoint limitation / (\*) if available

\*\*\* : no fan speed control on the CVV air curtain / \*\*\*\* : run & fault



# Specifications

		RTD-RA	RTD-NET	RTD-10	RTD-20	RTD-HO	RTD-W	RTD-LT/CA
Dimensions	HeightxWidthxDepth	80x80x37,5		100x100x22				
Weight		120						-
Operation range		0~50						-
Power supply		15V-24V DC						-
Voltage /resistance input		2	N/A	6	6	3	6	
Voltage input		N/A	N/A	0~10VDC < 1mA	0~10VDC < 1mA	N/A	0~10VDC < 1mA	
Resistance input		5V, 1mA	N/A	5V, 1mA	5V, 1mA	5V, 1mA	5V, 1mA	
Dry contact input ports		N/A	N/A	2	N/A	N/A	N/A	
Modbus connection		RS485						
P1/P2 connection		yes						
Relay		N/A	N/A	1A, 24VAC max	1A, 25VAC max	1A, 24VAC max	1A, 25VAC max	
		N/A	N/A	1A, 30VDC max	1A, 30VDC max	1A, 30VDC max	1A, 30VDC max	

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



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