

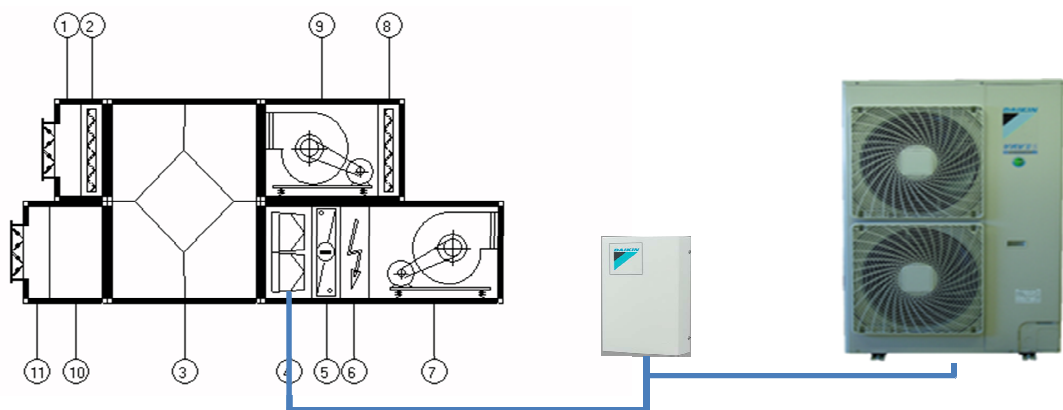
RTD-20 – ERQ Mode



The RTD-20 ERQ mode gives a linear 0-10vDC control of the ERQ capacity for cooling and heating coils within air handling units. 0vDC is minimum and 10vDC is maximum capacity in both heating and cooling.

Not only does this mode allow full linear control via a BMS, but also gives you a single point of control for all the available functions over BMS.

Control over the system can either be by hard wired physical contacts or via Modbus commands which enables full control via BMS without any additional wired contacts.




Features

On/Off, 0-10vDC linear control, Cool/Heat Selection, Pull down mode, Run/Defrost indication, Unit fault indication

Simplified Controls Setup

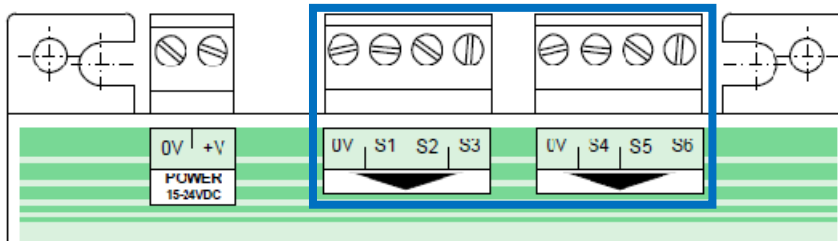
To activate ERQ mode set the dip switches marked 1 & 2 on the RTD 20 to the ON position



This configuration sets the relay output R1 at the bottom of the controller  to give a run indication, by setting dipswitch 3 to the on position you can change the R1 output to give a defrost indication. The R2 relay gives a unit fault output.

Hard wired control

As with other RTD products, the RTD-20 input hard wired controls are via the Voltage inputs at the top of the controller. All contacts are linked to the common 0V contact to close (make)



The following table shows which functions are controlled by which contacts. Default settings are shown in blue

Contact	Description	Closed made contact	Open unmade contact	Variable 0-10VDC
S1	On/Off	On	Off	N/A
S2	Heat/Cool	Heating	Cooling	N/A
S3	Coil Demand	N/A	N/A	Capacity control
S4	Pull down mode enable	Enable	Disabled	N/A
S5	External Mode Source (for commissioning only)	Enable RC/ITC	RTD Control	N/A
S6	Not Used	N/A	N/A	N/A

S1 – On/Off control (voltage free contact)

S2 – Heat/Cool control, changes the system from heating to cooling and vice versa (voltage free contact)

S3 – Capacity demand, varies the capacity from approximately 30% to 100% capacity (0-10V DC control)

Please note that in the event of the coil temperature falling below 2 degrees C, the condenser will back off in order to prevent freezing up of the coil

S4 – Pull down mode, this mode enables the unit to decrease its minimum evaporating temperature (voltage free contact)

S5 – External Mode Source, this contact can enable commissioning and service access via a temporarily connected Daikin BRC controller.

Modbus Control

If all functions are to be controlled via a Modbus enabled BMS then the settings are changed by altering Holding Registers, these registers control the same functions in the same manner as shown above.

Default settings are shown in [blue](#)

Holding Register	Description	Modbus value 100	Modbus value 0	Modbus value 0 - 1000
H13001	On/Off	On	Off	N/A
H13002	Heat/Cool	Heating	Cooling	N/A
H13003	Coil Demand	N/A	N/A	Capacity control
H13004	Pull down mode enable	Enable	Disabled	N/A

Requirements

The following parts are required.

ERQ condenser, EKEXV Expansion valve, EKEQDCB Control box, UK.RTD-20 for linear control input. A BRC hard wired controller is only required for fault code retrieval, it is not necessary to have a controller permanently connected. This system replaces control X.

FAQ

On commissioning, Daikin remote controllers must be switched to SUB mode.

RTD-20 can be used on EKEQMCB boxes for connecting to Air Handling units connected to VRV.

RTD-20 can be installed within the EKEQ control box, no fixing box required

