

# Ventilation

Product catalogue 2023  
for professionals



Fresh air for the commercial sector  
Heat recovery ventilation and air handling applications





VRV IV+ in mix application with VRV indoor units and Modular R AHU

# VRV - for larger capacities (from 8 to 54HP)

## An advanced solution for both pair and multi application

- > Inverter controlled units
- > Heat pump
- > Heat recovery only for mix application with indoor units without hydrobox. For 100% recirculation AHUs only used as a VRV indoor unit.
- > R-410A
- > Control of room temperature via Daikin control
- > Large range of expansion valve kits available
- > BRC1H\* is used to set the set point temperature (connected to the EKEQMCBA).
- > Connectable to all VRV heat recovery and heat pump systems (VRV H/R and VRV-i only connectable with Z control)

### Pair application

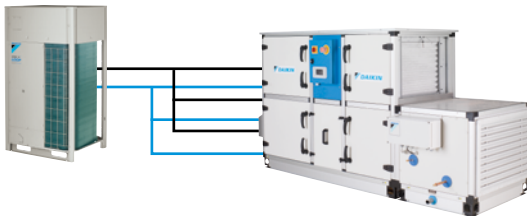
#### One ERQ or VRV IV heat pump (system) connected to one AHU through one refrigerant circuit

- > with W, X, Y and Z control
- > not allowed for VRV H/R



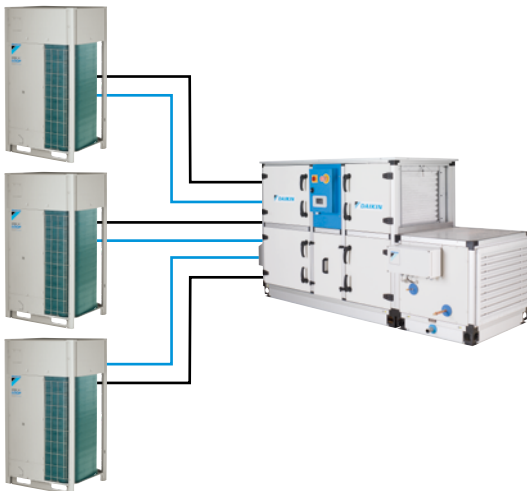
#### One VRV IV heat pump (system) connected to the interlaced coil of one AHU through several refrigerant circuits

- > with W, X and Y control
- > not allowed for VRV H/R and VRV-i



#### Several ERQ or VRV IV heat pumps connected to the interlaced coil of one AHU through several refrigerant circuits

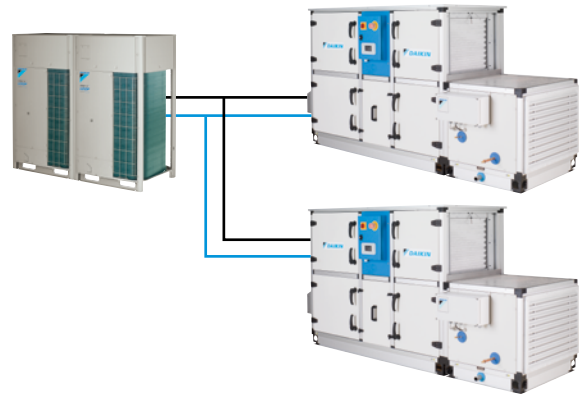
- > with W, X and Y control
- > not allowed for VRV H/R and VRV-i



### Multi application

#### One VRV IV heat pump connected to several AHUs

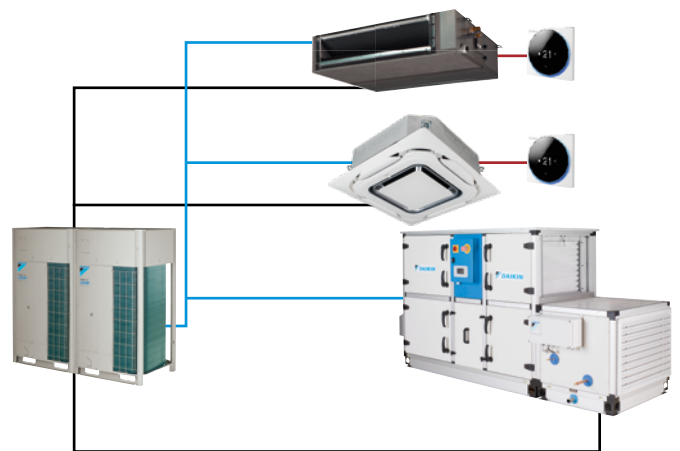
- > with Z control and field supplied controls on AHU side.
- > not allowed for VRV H/R
- > no interlaced coil possible



### Mix application

#### VRV indoor units and AHU(s) mixed in the same VRV IV heat pump or heat recovery system

- > with Z control and field supplied controls on AHU side
- > no interlaced coil possible
- > hydrobox not possible



- Refrigerant piping
- F1-F2
- P1-P2



# ERQ - for smaller capacities (from 100 to 250 class)

A basic fresh air solution for pair application

- › Inverter controlled units
- › Heat pump
- › R-410A
- › Wide range of expansion valve kits available
- › Perfect for the Daikin Modular air handling unit

The "Daikin Fresh Air Package" provides a complete Plug & Play Solution including AHU, ERQ or VRV Condensing Unit and all unit control (EKEQ, EKEX, DDC controller) factory mounted and configured. The easiest solution with only one point of contact.

More details and final information can be found by scanning or clicking the QR codes.



ERQ-AV1



ERQ-AW1



ERQ-AW1

| Ventilation          |                         |                           |                     | ERQ  | 100AV1                            | 125AV1 | 140AV1 |
|----------------------|-------------------------|---------------------------|---------------------|------|-----------------------------------|--------|--------|
| Capacity range       |                         |                           | HP                  | 4    | 5                                 | 6      |        |
| Cooling capacity     | Nom.                    |                           | kW                  | 11.2 | 14.0                              | 15.5   |        |
| Heating capacity     | Nom.                    |                           | kW                  | 12.5 | 16.0                              | 18.0   |        |
| Power input          | Cooling                 | Nom.                      | kW                  | 2.81 | 3.51                              | 4.53   |        |
|                      | Heating                 | Nom.                      | kW                  | 2.74 | 3.86                              | 4.57   |        |
| EER                  |                         |                           |                     |      | 3.99                              |        | 3.42   |
| COP                  |                         |                           |                     | 4.56 | 4.15                              |        | 3.94   |
| Dimensions           | Unit                    | HeightxWidthxDepth        | mm                  |      | 1,345x900x320                     |        |        |
| Weight               | Unit                    |                           | kg                  |      | 120                               |        |        |
| Casing               | Material                |                           |                     |      | Painted galvanized steel plate    |        |        |
| Fan-Air flow rate    | Cooling                 | Nom.                      | m <sup>3</sup> /min |      | 106                               |        |        |
|                      | Heating                 | Nom.                      | m <sup>3</sup> /min | 102  |                                   | 105    |        |
| Sound power level    | Cooling                 | Nom.                      | dBA                 | 66   | 67                                |        | 69     |
| Sound pressure level | Cooling                 | Nom.                      | dBA                 | 50   | 51                                |        | 53     |
|                      | Heating                 | Nom.                      | dBA                 | 52   | 53                                |        | 55     |
| Operation range      | Cooling                 | Min./Max.                 | °CDB                |      | -5/46                             |        |        |
|                      | Heating                 | Min./Max.                 | °CWB                |      | -20/15.5                          |        |        |
|                      | On coil temperature     | Heating/Min./Cooling/Max. | °CDB                |      | 10/35                             |        |        |
| Refrigerant          | Type                    |                           |                     |      | R-410A                            |        |        |
|                      | Charge                  |                           | kg                  |      | 4.0                               |        |        |
|                      |                         |                           | TCO <sub>2</sub> eq |      | 8.4                               |        |        |
|                      | GWP                     |                           |                     |      | 2,087.5                           |        |        |
| Piping connections   | Control                 |                           |                     |      | Expansion valve (electronic type) |        |        |
|                      | Liquid                  | OD                        | mm                  |      | 9.52                              |        |        |
|                      | Gas                     | OD                        | mm                  |      | 15.9                              |        | 19.1   |
| Drain                | OD                      | mm                        |                     |      | 26x3                              |        |        |
| Power supply         | Phase/Frequency/Voltage |                           | Hz/V                |      | 1N~/50/220-240                    |        |        |
| Current              | Maximum fuse amps (MFA) |                           | A                   |      | 32.0                              |        |        |

| Ventilation          |                         |                           |                     | ERQ           | 125AW1                         | 200AW1        | 250AW1 |
|----------------------|-------------------------|---------------------------|---------------------|---------------|--------------------------------|---------------|--------|
| Capacity range       |                         |                           | HP                  | 5             | 8                              | 10            |        |
| Cooling capacity     | Nom.                    |                           | kW                  | 14.0          | 22.4                           | 28.0          |        |
| Heating capacity     | Nom.                    |                           | kW                  | 16.0          | 25.0                           | 31.5          |        |
| Power input          | Cooling                 | Nom.                      | kW                  | 3.52          | 5.22                           | 7.42          |        |
|                      | Heating                 | Nom.                      | kW                  | 4.00          | 5.56                           | 7.70          |        |
| EER                  |                         |                           |                     | 3.98          | 4.29                           | 3.77          |        |
| COP                  |                         |                           |                     | 4.00          | 4.50                           | 4.09          |        |
| Dimensions           | Unit                    | HeightxWidthxDepth        | mm                  | 1,680x635x765 |                                | 1,680x930x765 |        |
| Weight               | Unit                    |                           | kg                  | 159           | 187                            | 240           |        |
| Casing               | Material                |                           |                     |               | Painted galvanized steel plate |               |        |
| Fan-Air flow rate    | Cooling                 | Nom.                      | m <sup>3</sup> /min | 95            | 171                            | 185           |        |
|                      | Heating                 | Nom.                      | m <sup>3</sup> /min | 95            | 171                            | 185           |        |
| Sound power level    | Nom.                    |                           | dBA                 | 72            |                                | 78            |        |
| Sound pressure level | Nom.                    |                           | dBA                 | 54            |                                |               | 58     |
| Operation range      | Cooling                 | Min./Max.                 | °CDB                |               | -5/43                          |               |        |
|                      | Heating                 | Min./Max.                 | °CWB                |               | -20/15                         |               |        |
|                      | On coil temperature     | Heating/Min./Cooling/Max. | °CDB                |               | 10/35                          |               |        |
| Refrigerant          | Type                    |                           |                     |               | R-410A                         |               |        |
|                      | Charge                  |                           | kg                  | 6.2           | 7.7                            | 8.4           |        |
|                      |                         |                           | TCO <sub>2</sub> eq | 12.9          | 16.1                           | 17.5          |        |
|                      | GWP                     |                           |                     |               | 2,087.5                        |               |        |
| Piping connections   | Control                 |                           |                     |               | Electronic expansion valve     |               |        |
|                      | Liquid                  | OD                        | mm                  |               | 9.52                           |               |        |
|                      | Gas                     | OD                        | mm                  | 15.9          | 19.1                           | 22.2          |        |
| Power supply         | Phase/Frequency/Voltage |                           | Hz/V                |               | 3N~/50/400                     |               |        |
| Current              | Maximum fuse amps (MFA) |                           | A                   | 16            |                                | 25            |        |

# Integration of ERQ and VRV in third party air handling units

a wide range of expansion valve kits and control boxes

## Combination table

|  | Control box |               |           | Expansion valve kit |          |          |           |           |           |           |           |           |           | Mixed connection with VRV indoor units |   |              |
|--|-------------|---------------|-----------|---------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|---|--------------|
|  | EKEQDCB     | EKEQFCBA      | EKEQMCBA  | EKE XV50            | EKE XV63 | EKE XV80 | EKE XV100 | EKE XV125 | EKE XV140 | EKE XV200 | EKE XV250 | EKE XV400 | EKE XV500 |  |   |              |
|  | Z control   | W,X,Y control | Z control | -                   | -        | -        | -         | -         | -         | -         | -         | -         | -         | -                                      | - |              |
| 1-phase  | ERQ100      | P (1)         | P         | -                   | -        | P        | P         | P         | P         | P         | -         | -         | -         | -                                      | - | Not possible |
|  | ERQ125      | P (1)         | P         | -                   | -        | P        | P         | P         | P         | P         | -         | -         | -         | -                                      | - |              |
|  | ERQ140      | P (1)         | P         | -                   | -        | -        | P         | P         | P         | P         | -         | -         | -         | -                                      | - |              |
|  | ERQ125      | P (1)         | P         | -                   | -        | P        | P         | P         | P         | P         | -         | -         | -         | -                                      | - |              |
| 3-phase  | ERQ200      | P (1)         | P         | -                   | -        | -        | -         | P         | P         | P         | P         | P         | -         | -                                      | - | Not possible |
|  | ERQ250      | P (1)         | P         | -                   | -        | -        | -         | -         | P         | P         | P         | P         | -         | -                                      | - |              |
| VRV IV H/P (RYYQ, RXYQ, RXYSQ, RXYTQ, RXYLQ, RWVEYQ) | -           | P             |           | P (1) / n2 (1)      |          |          |           |           |           |           |           |           |           | Possible (not mandatory)               |   |              |
| VRV IV i-series                                      | -           | -             |           |                     |          |          |           |           |           |           |           |           |           | Mandatory (no hydrobox)                |   |              |
| VRV IV H/R   | -           | -             |           | n1                  |          |          |           |           |           |           |           |           |           |  |   |              |

- P (pair application) - One or more outdoor units connected to an (interlaced) coil of one AHU. To determine exact configuration please refer to the engineering data book.
- n1 (only mix application) - Combination of (multiple) AHU(s) and VRV DX indoor(s) is mandatory. To determine the exact configuration please refer to the engineering data book.
- n2 (mix or multi application) - Combination of (multiple) AHU(s) with (mix application) or without (multi application) VRV DX indoor(s). To determine the exact configuration please refer to the engineering data book.
- Control box EKEQFA can be connected to some types of VRV IV outdoor units (with a maximum of 3 boxes per unit). Do not combine EKEQFA control boxes with VRV DX indoor units, RA indoor units or hydroboxes
- (1) No interlaced coil possible with Z control

## Capacity table

### Cooling

| EKE XV Class | Allowed heat exchanger capacity (kW) |          |         | Allowed heat exchanger volume (dm <sup>3</sup> ) |         |
|--------------|--------------------------------------|----------|---------|--|---------|
|              | Minimum                              | Standard | Maximum | Minimum  | Maximum |
| 50           | 5.0                                  | 5.6      | 6.2     | 1.33   | 1.65    |
| 63           | 6.3                                  | 7.1      | 7.8     | 1.66   | 2.08    |
| 80           | 7.9                                  | 9.0      | 9.9     | 2.09   | 2.64    |
| 100          | 10.0                                 | 11.2     | 12.3    | 2.65   | 3.30    |
| 125          | 12.4                                 | 14.0     | 15.4    | 3.31   | 4.12    |
| 140          | 15.5                                 | 16.0     | 17.6    | 4.13   | 4.62    |
| 200          | 17.7                                 | 22.4     | 24.6    | 4.63   | 6.60    |
| 250          | 24.7                                 | 28.0     | 30.8    | 6.61   | 8.25    |
| 400          | 35.4                                 | 45.0     | 49.5    | 9.26   | 13.2    |
| 500          | 49.6                                 | 56.0     | 61.6    | 13.2   | 16.5    |

Saturated evaporating temperature: 6°C  
Air temperature: 27°C DB / 19°C WB

### Heating

| EKE XV Class | Allowed heat exchanger capacity (kW) |          |         | Allowed heat exchanger volume (dm <sup>3</sup> ) |         |
|--------------|--------------------------------------|----------|---------|--|---------|
|              | Minimum                              | Standard | Maximum | Minimum  | Maximum |
| 50           | 5.6                                  | 6.3      | 7.0     | 1.33   | 1.65    |
| 63           | 7.1                                  | 8.0      | 8.8     | 1.66   | 2.08    |
| 80           | 8.9                                  | 10.0     | 11.1    | 2.09   | 2.64    |
| 100          | 11.2                                 | 12.5     | 13.8    | 2.65   | 3.30    |
| 125          | 13.9                                 | 16.0     | 17.3    | 3.31   | 4.12    |
| 140          | 17.4                                 | 18.0     | 19.8    | 4.13   | 4.62    |
| 200          | 19.9                                 | 25.0     | 27.7    | 4.63   | 6.60    |
| 250          | 27.8                                 | 31.5     | 34.7    | 6.61   | 8.25    |
| 400          | 39.8                                 | 50.0     | 55.0    | 9.26   | 13.2    |
| 500          | 55.1                                 | 63.0     | 69.3    | 13.2   | 16.5    |

Saturated condensing temperature: 46°C  
Air temperature: 20°C DB

## EKE XV - Expansion valve kit for air handling applications

| Ventilation               |                     | EKE XV            | 50               | 63   | 80 | 100 | 125 | 140 | 200 | 250 | 400  | 500  |
|---------------------------|---------------------|-------------------|------------------|------|----|-----|-----|-----|-----|-----|------|------|
| Dimensions                | Unit                | mm                | 401x215x78       |      |    |     |     |     |     |     |      |      |
| Weight                    | Unit                | kg                | 2.9              |      |    |     |     |     |     |     |      |      |
| Sound pressure level Nom. |                     | dBA               | 45               |      |    |     |     |     |     |     |      |      |
| Operation range           | On coil temperature | Heating Min. °CDB | 10 (1)           |      |    |     |     |     |     |     |      |      |
|                           |                     | Cooling Max. °CDB | 35 (2)           |      |    |     |     |     |     |     |      |      |
| Refrigerant               | Type / GWP          |                   | R-410A / 2,087.5 |      |    |     |     |     |     |     |      |      |
| Piping connections        | Liquid OD           | mm                | 6.35             | 9.52 |    |     |     |     |     |     | 12.7 | 15.9 |

(1) The temperature of the air entering the coil in heating mode can be reduced to -5°CDB. Contact your local dealer for more information. (2) 45% Relative humidity.

## EKEQ - Control box for air handling applications

| Ventilation  |                         | EKEQ | FCBA        | DCB  | MCBA           |
|--------------|-------------------------|------|-------------|------|----------------|
| Application  |                         |      | Pair        | Pair | Pair/Multi/Mix |
| Outdoor unit |                         |      | ERQ / VRV   | ERQ  | VRV            |
| Dimensions   | Unit                    | mm   | 132x400x200 |      |                |
| Weight       | Unit                    | kg   | 3.9         | 3.6  |                |
| Power supply | Phase/Frequency/Voltage | Hz/V | 1~/50/230   |      |                |

The combination of EKEQFCBA and ERQ is in pair application. The EKEQFCBA can be connected to some type of VRV IV outdoor units with a maximum of 3 control boxes. The combination with DX indoor units, hydroboxes, RA outdoor units, ... is not allowed. Refer to the combination table drawing of the outdoor unit for details.

For more information refer to the EKE XV or EKEQ databooks

