



United Technologies

## PRODUCT SELECTION



- Optimised Coanda Effect diffusion
- Indoor comfort
- Air quality
- Responsiveness of the system and individual adjustment
- Low energy consumption
- Acoustic comfort
- Design
- Ease of maintenance

## One-way Coanda Effect cassette

42KY



CARRIER participates in the ECP programme for LCP/HP  
Check ongoing validity of certificate:  
[www.eurovent-certification.com](http://www.eurovent-certification.com)  
[www.certiflash.com](http://www.certiflash.com)



## PRESENTATION

Energy performance, comfort and indoor air quality: Carrier's new 42KY cassette is the all-in-one solution to meet heating and cooling requirements for commercial buildings and provide optimum comfort for users.

Low consumption (LEC) variable speed active comfort unit making it possible to adapt the indoor temperature automatically and independently to the preferences of occupants with very quick response times.

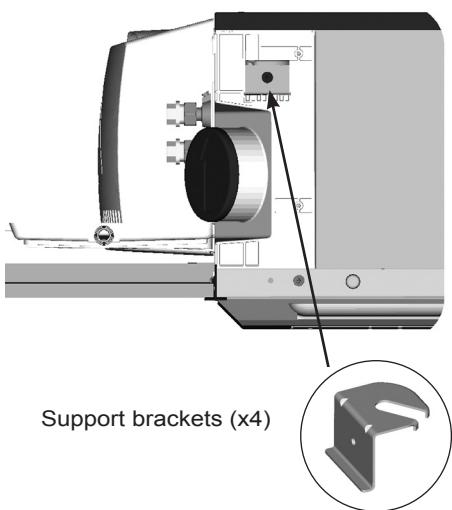
Coanda Effect diffusion, optimised according to the standard NF EN ISO 7730, ensures perfect control of thermal phenomena that can cause discomfort. Carrier's new 42KY cassette makes it possible to eliminate draughts that are felt with sweeping diffusion systems or direct airflow onto the occupant.

Eco-designed product that is 90% recyclable. The 42KY cassette has been developed to limit its impact on the environment throughout its life cycle.

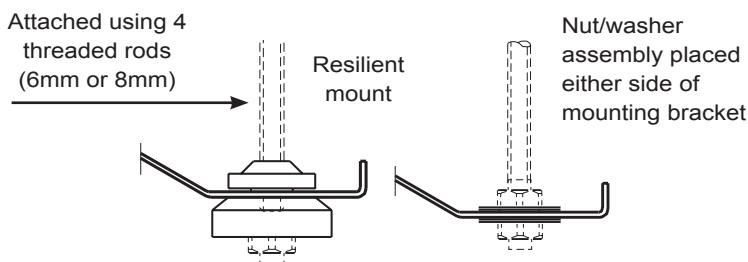
## USE

The air treatment unit is fitted within the suspended ceiling, at the edge of the room, with the outlet facing the windows. It has all the economical advantages that come from installing and operating a central heated and chilled water production unit. The location facilitates hydraulic connection via the suspended ceiling of the adjoining corridor, and gravity draining of condensate (no pump).

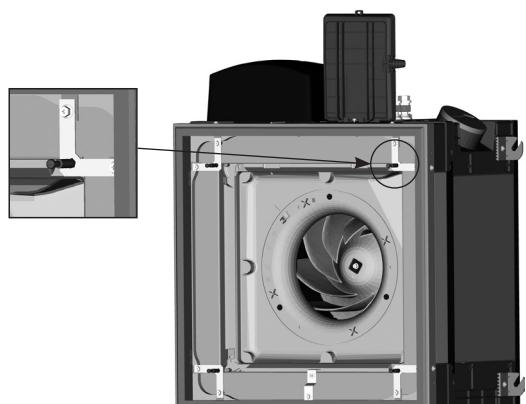
THE 42KY CASSETTE must be suspended from the ceiling with four 6 mm or 8 mm threaded rods (not supplied), that are fixed to the four mounting brackets of the device with elastic anti-vibration mounts or a nut/washer assembly fitted either side of the mounting bracket.



Fixing the unit  
2 options



Diffuser mounting system with 4 captive screws



## OPERATING LOGIC

The centrifugal turbine draws air through a perforated metal intake grille. The air is filtered, then heated or cooled through a temperature exchange coil fed with either hot or chilled water. The air is then pulsed horizontally at 180°, by means of the Coanda Effect in the room to be treated.

## THE COANDA EFFECT

One-way Coanda Effect diffuser:

The single slot peripheral outlet with its narrow opening and specific internal profile will increase the initial speed of the air as it leaves the diffuser. The high speed of the moving flow of air causes an area of low pressure which keeps it close to the ceiling, (there is no direct blast on occupants) and the ambient air is drawn in by induction to be reinjected in the air stream. The air mix rate, the range and the coverage of the air flow are improved, which reduces thermal phenomena that cause discomfort in the occupied area (residual air flow rate, asymmetric temperatures, radiation caused by walls, etc.).

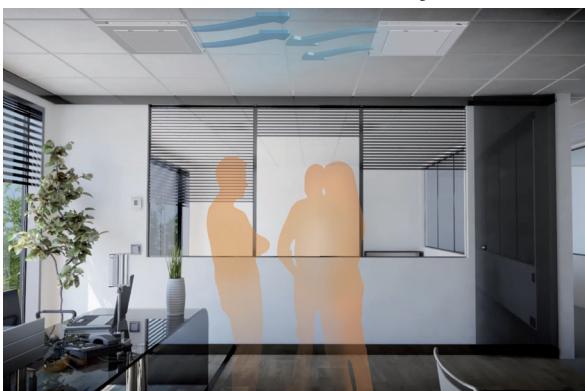
## "ANTI COLD SHOWER" SYSTEM

The one-way 180° diffuser is fitted with an "anti cold shower" system that maximises comfort by preventing cold air from falling between two cassettes.

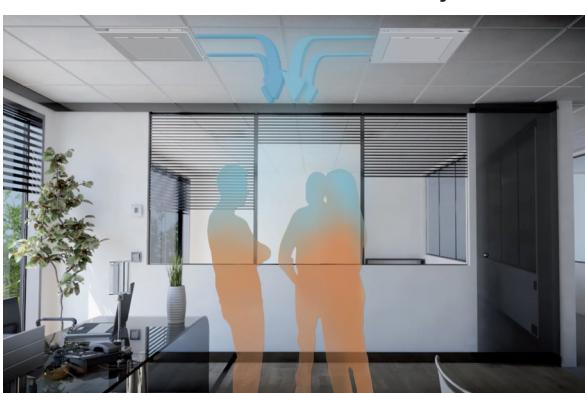
The system incorporates two deflectors in the insulation which offsets the air stream slightly in the lateral axis. When the units are placed side by side in the same room, the air flows do not oppose one another and cross over in parallel, which avoids any cold air draughts.

This patented system removes the discomfort caused by draughts without having to reduce the outlets and with no increased noise levels, while maintaining the air flow necessary for the thermal requirements.

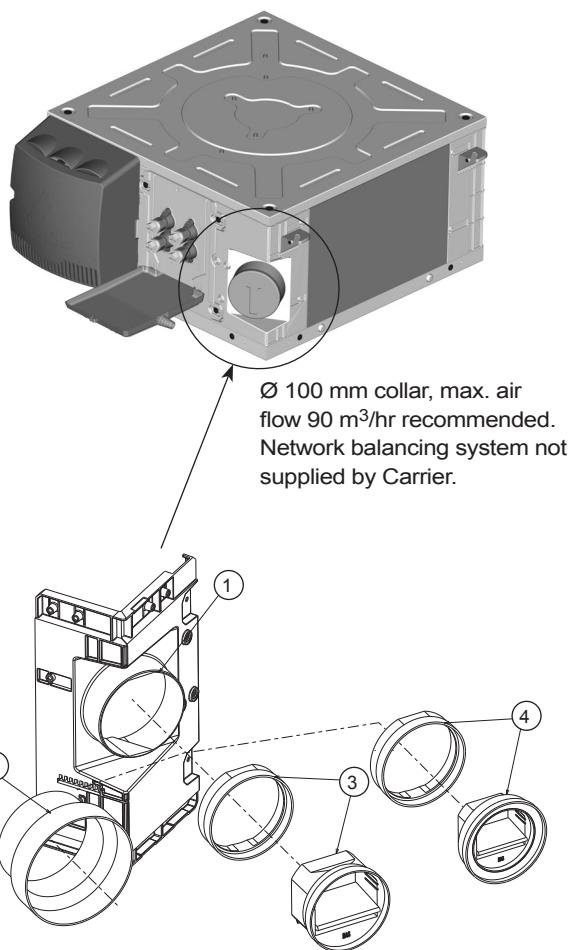
### with "anti cold shower" system



### without "anti cold shower" system



## FRESH AIR INLET COLLAR



- 1) Fresh air inlet on device
- 2) Ø100/Ø125 mm adapter
- 3) Air flow rate controller kit 60/75/90 m<sup>3</sup>/h
- 4) Air flow rate controller kit 15/30/45 m<sup>3</sup>/h

## **INNOVATIVE DESIGN**

Next generation chassis that combines high density EPS for its thermal and phonic properties, ABS PC and a ribbed galvanised sheet steel base to stiffen the assembly.

Chassis with unique dimensions for all sizes, adapted to the suspended ceiling grid size 600 x 600 mm.

Hydraulic, air and electrical connections on the same side to facilitate installation and access for maintenance operations.

Fresh air inlet with 100 mm sleeve integrated to the chassis with removable plug.

## **RANGE**

The 42KY one-way cassette range includes 3 models that cover a flow rate of 250 to 770 m<sup>3</sup>/h which meet the most stringent of noise level requirements.

The 42KY is available as:

- 2-pipe system, heating or cooling operation.
- 2-pipe + 2-wire system, cooling + heating/cooling + electric heater.
- 4-pipe system, cooling and heating operation.

## **ADVANTAGES**

The use of a heat transfer fluid is an ecological and durable solution.

Individual adjustment of the indoor temperature.

Responsive system.

Large power range.

Coanda Effect diffusion over 180° for even coverage and perfect control of thermal phenomena that can cause discomfort.

Acoustic comfort.

LEC low consumption motor.

G3 filter.

Optimised hydraulic coil.

Condensate drain by gravity avoiding the need for a drain pump.

Modern and elegant design for perfect integration.

Environmentally responsible product.

Ease of maintenance.

## **GREATER COMFORT**

Optimised Coanda Effect diffusion for perfect control of thermal phenomena that can cause discomfort and make the room feel draughty.

## **COMPLIANCE WITH ENERGY REQUIREMENTS**

Specially developed temperature exchange coils to meet the requirements of low energy buildings.

Optimised temperature exchange coils to limit cost and consumption in comparison with the other components of the installation.

LEC low consumption motor.

Reduction in power of the electric heating coils to match the requirements of new buildings.

## ECO-DESIGN

### Raw materials

30% saving in weight and 21% saving in volume thanks to a compact and well thought out architecture.  
Use of easily recyclable materials (EPS and ABS).

### Transport

Raw material suppliers selected from those that are less than 100 km from our manufacturing and packaging factory, enabling a 50% gain in volumes transported (reduction in CO<sub>2</sub> emissions).

### Recycling and demountability

90% recyclable products.

Materials can be completely separated and fixings have been reduced by 40% to allow greater efficiency at recycling plants.



## EASY TO INSTALL AND OPERATE

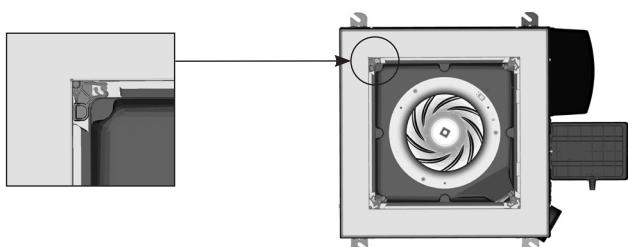
The 42KY cassette is designed to be easy to fit and not require many on-site operations:

Fitting template provided with each unit to mark out the anchoring points on the ceiling.

Optimised weight and size to facilitate handling during installation.

Mounting brackets equipped with anti-slip system to hold the threaded rods when attaching and levelling the unit.

Safety system to suspend the diffuser leaving the technician's hands free to tighten the mounting bolts.



Technical plate containing all connections (electrical, air and hydraulic) on one face.

Fresh air inlet sleeve with plug integrated directly to the chassis (no fitting necessary).

Large electrical box with single latch that can house all the control systems of the CARRIER range.

Access to internal components without the need to open suspended ceilings, easy to open filter grille hatch that is hinged to facilitate maintenance operations.

Diffusion panels supplied in individual packaging, making it easier to fit the unit with no risk of damaging or soiling visible parts during installation.

## TECHNICAL DESCRIPTION

### Return/supply air interface

**Coanda Effect diffusion through a single slot with a narrow opening and specific internal profile.**

- 180° diffusion
- In sheet metal painted in RAL 9010 to be fitted over the chassis and exactly the same dimensions as a standard suspended ceiling tile.
- Perforated metal intake grille with hinge-mounted filter housing that requires no tools to open it.
- PSE insulation, M1 fire resistance with very low heat transfer coefficient.
- Flat G3 filter on metal frame.

### Base

- Single casing and reduced size for all unit sizes, fits in place of a 600 x 600 mm or 675 x 675 mm suspended ceiling tile (option).
- Ribbed galvanised steel motor support base panel, 10/10th thick.
- High-density PSE casing integrating thermal and acoustic functionalities. 15 mm thick for the base and 25 mm to 30 mm thick for the vertical walls which form the casing.
- Low emission of TVOCs and no halogenated compounds.
- ABS corner reinforcements fitted with open galvanised one-way steel mounting brackets for assembly of threaded rods.
- Fire rating: M1.
- Hydraulic, air and electrical connections on the same side of the technical panel at the rear of the unit providing a single access point.
- Finish frame in RAL 9010 galvanised steel, 8/10th thick, housing the diffusion interface.

### Water coil

- 1 hot or cold water circuit (2-pipe system).
- 1 hot water circuit + 1 cold water circuit (4-pipe system).
- Single piece sleeve with 40 mm centre to centre distance with integrated sealed flush fitting female revolving unions, for easy fitting of the control valves.
- One, two or three row circular coil with low pressure drop.
- Copper pipes, one-piece aluminium fins (1.6 mm pitch).
- Purge and drain.
- Rated pressure 16 bar (at 20°C).
- Test pressure 24 bar.
- Max. hot water inlet temperature:
  - 4-pipe application: 80°C,
  - 2-pipe application: 70°C,
  - 2-pipe/2-wire application: 55°C (min air flow rate: 200m<sup>3</sup>/h).
- Min cold water inlet temperature: 6°C.

### Electric heater (2-pipe + electric system)

- 230/1/50 single-pipe electrical elements inserted into the aluminium housing.
- 2 temperature limiters, manually and automatically reset, inserted in the aluminium block with easy access that does not require the suspended ceiling to be opened, via the Intake / outlet interface.
- Heating element supply connected to the terminal block inside the electrics box.
- It is possible to deactivate a heater element on site by means of a shunt on the terminal to reduce the electrical power.

### Condensate drain pan

- Single unit main pan in high-density sealed PSE for use in all climates, naturally sloped and removable from below without the need to open the suspended ceiling.
- Fire rating: M1.
- PC ABS auxiliary pan (configured to prevent standing water) to be used to catch condensate from valves from the primary pan.
- Gravity drain: height 70 mm.
- Drainage bushing: external Ø 15 to 20 mm.

### Fan motor assembly

#### LEC motor (low energy consumption)

**Low energy motor making it possible to reduce electrical consumption by up to 85%.**

- Sealed, tropicalised, with protected shaft.
- Progressive control with 0-10V control signal.
- Roller bearings.
- Internal automatic overload protection as standard on winding.
- Mounted on anti-vibration mounts.
- \*230V/1Ph/50 Hz power supply (60Hz compatible).

**Note:** The minimum voltage required for start-up of the motor is 2V.

### Or

#### Asynchronous motor

5 factory-wired speeds connected to a terminal strip for customisation.

- Sealed, tropicalised, with protected shaft.
- Permanent capacitor.
- Roller bearings.
- Internal automatic overload protection as standard on winding.
- Resilient mounts.
- \*230V/1Ph/50 Hz power supply (60Hz compatible).
- High efficiency and power factor.

### Fan(s)

- Balanced centrifugal turbine Ø 282 mm with profiled blades.
- Polymer turbine.
- Single point mounting system with foolproofing device.

### Electrics box

- ABS electrics box with generous dimensions, with a hinge to keep it open and screw closure.
- Protection rating IP20.
- Electrical connection terminal on DIN rail in compliance with EN 50022, 7.5 mm deep.
- Marked out terminal strip with spring connectors. Cross section 0.5 to 2.5 mm<sup>2</sup> - Max current: 24A – Shock resistance: 8 kV. Cable routing for customer connections.

### Fresh air supply sleeve

Ø100 mm fresh air supply connection sleeve integrated in the casing with removable plug.

## **Filters**

- Regenerable flexible polyester fibre filter element.
- Positioned at the fan inlet.
- EN779 class efficiency: G3.
- On rigid metal frame.
- Accessed via the hinged inlet grille.
- Low energy impact.
- Fire rating: M1.
- A protected air stream which prevents particles from being drawn into suspended ceilings.
- Even treatment of the room thanks to the optimised 180° Coanda Effect diffusion.
- Suitable mixing rate.

## **Securing the device**

- Factory fitted open mounting brackets in 15 mm galvanised steel, with anti-slip system to hold the threaded rods when attaching and levelling the unit.

## **Packaging**

- Strapped cardboard crate for the casing.
- Fitting template and direction of fitting printed on the cardboard.
- Return/supply air interface supplied separately in protective cardboard packaging.
- Delivered on film wrapped pallet from the factory.

## **Controls**

- A-B-C-D type electronic thermostats.
- NTC / Aquasmart Evolution networked electronic control.
- WTC LON or BACnet networked electronic control.

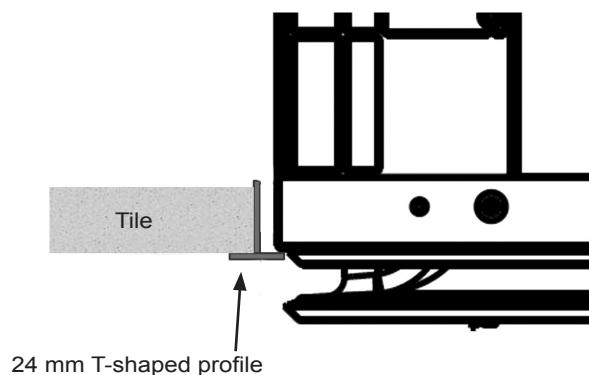
## **Options (factory assembled)**

- Condensate drain pump.
- Lift kit.
- Finishing trim frame for 675 x 675 mm suspended ceiling tiles.
- Finishing trim frame for STAFF ceilings.
- Hydraulic coil with protected blades for aggressive / corrosive areas (locations close to the sea or with chemical industries located close by).

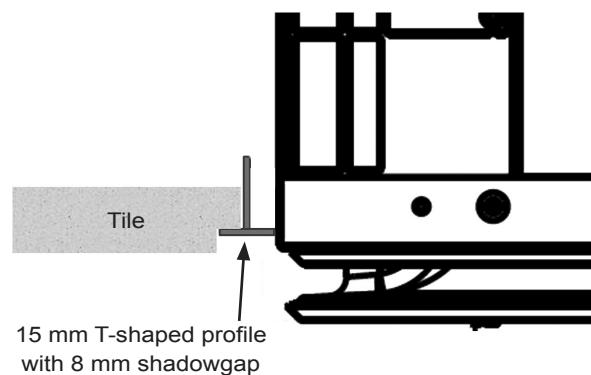
## **Accessories (available separately)**

- Anti-vibration resilient mounts for mounting brackets.
- Self-regulating conditioned fresh air inlet module (3 flow rates adjustable using a set of shims).
- Sleeve adaptor Ø 100-125 mm.
- Condensate drain pump kit with high safety device.
- 80 mm riser kit for gravity drainage without condensate drain pump.
- Finish counter frame kit for 675 mm suspended ceiling tile.

## INTEGRATION IN SUSPENDED CEILING

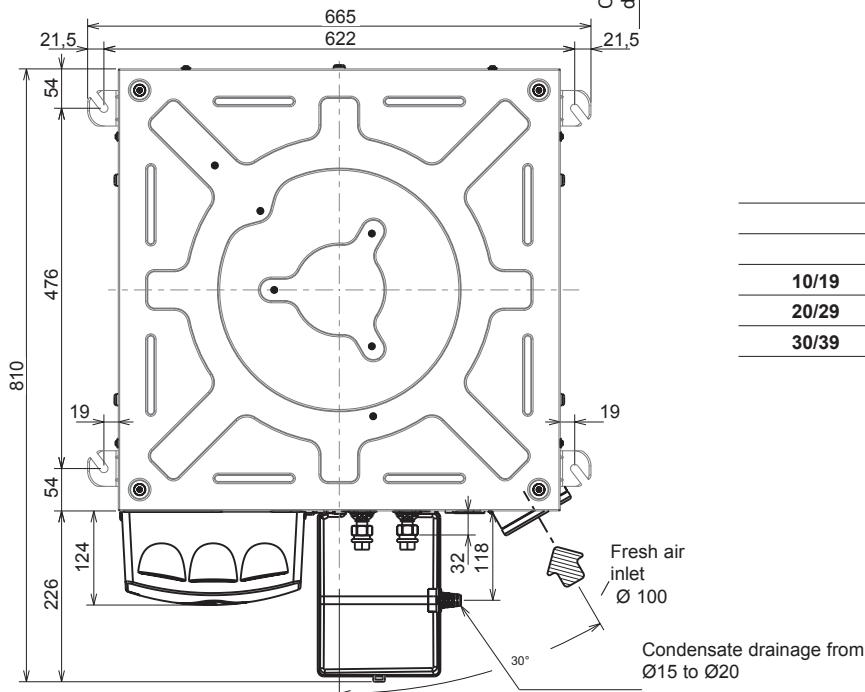
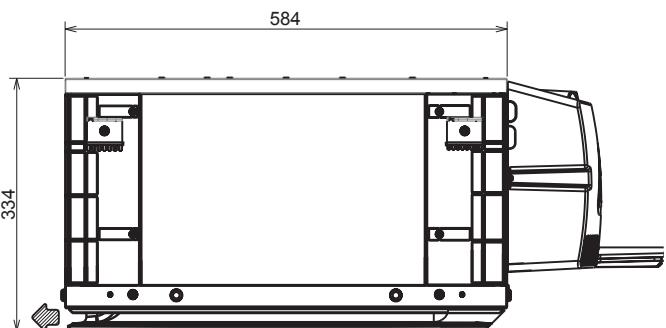
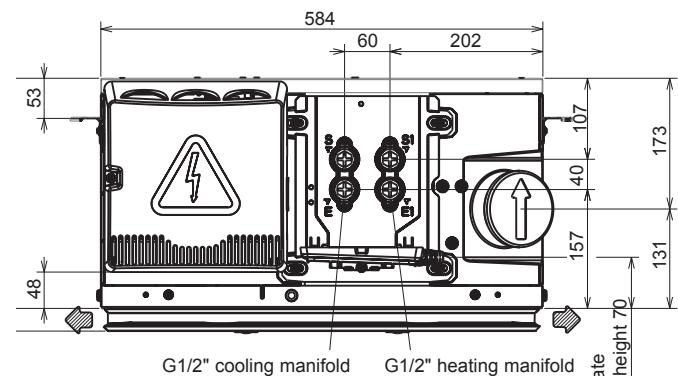


**Mounting position with 600 x 600 suspended ceiling on T-shaped profile**



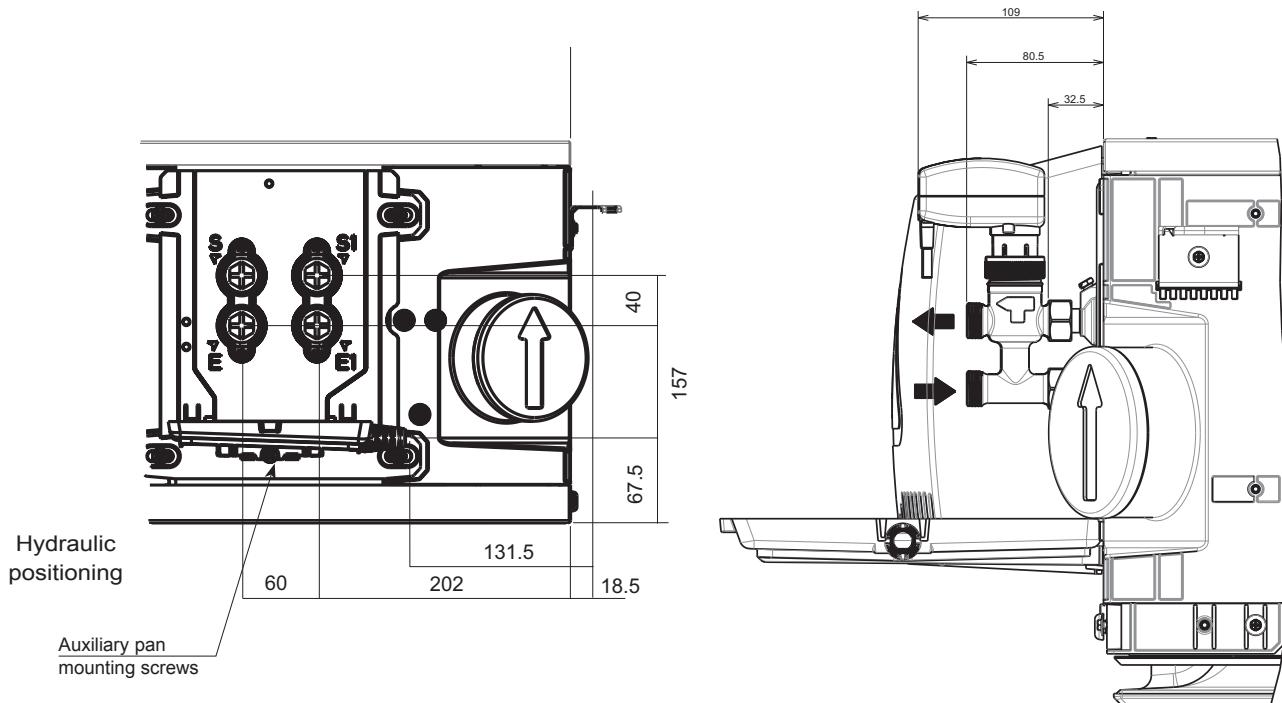
**Mounting position with 600 x 600 suspended ceiling on T-shaped profile with 8 mm shadowgap**

## DIMENSIONS



| Weight (kg) |          |       |
|-------------|----------|-------|
| 42KY        | Diffuser | Total |
| 10/19       | 15       | 18,5  |
| 20/29       | 16,5     | 20    |
| 30/39       | 18       | 21,5  |

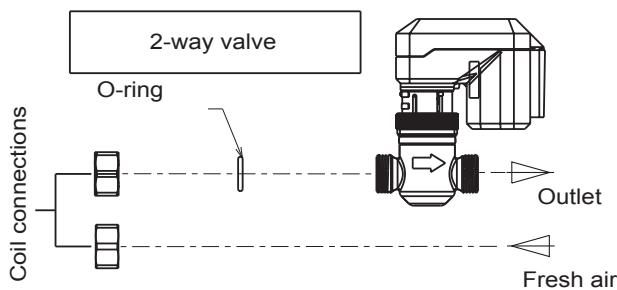
## POSITIONING OF PIPES AND VALVES



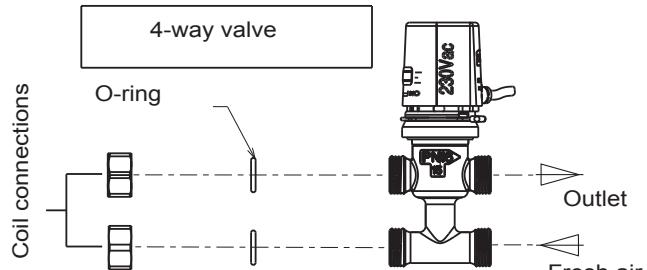
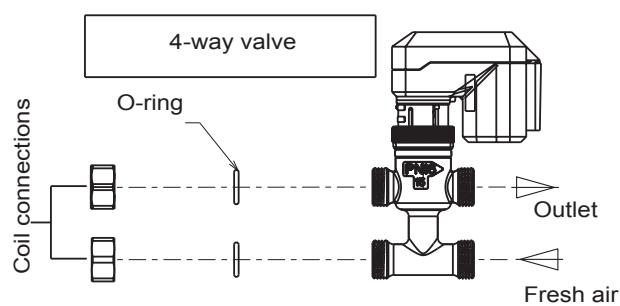
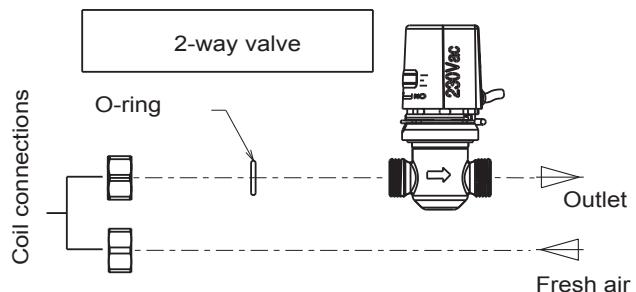
## HYDRAULIC CONNECTIONS WITH VALVE MOUNTING

### Valve and motor assembly (24V or 230V)

Heating/cooling assembly for valves with 3-point or 0-10V modulating motors



Heating/cooling assembly for valves with thermo-actuators



## SPECIFICATIONS FOR UNITS UNDER EUROVENT CONDITIONS

### 2-pipe

| 42KY | Speed | Voltage | Input Power | Air flow rate | Heating capacity | Pressure drop | Cooling capacity |            | Pressure drop | Lw    | LP    | NR | EUROVENT FCEER | EUROVENT FCCOP |
|------|-------|---------|-------------|---------------|------------------|---------------|------------------|------------|---------------|-------|-------|----|----------------|----------------|
|      |       | V       | W           | m3/h          | W                | kPa           | Total W          | Sensible W | kPa           | dB(A) | dB(A) |    | Class          | Class          |
| 10C  | HS    | -       | 45          | 440           | 2 410            | 9             | 1 740            | 1 590      | 11            | 49    | 37    | 32 | F              | F              |
|      | MS    | -       | 41          | 375           | 2 180            | 8             | 1 570            | 1 430      | 9             | 46    | 34    | 29 |                |                |
|      | LS    | -       | 34          | 230           | 1 640            | 5             | 1 220            | 1 060      | 6             | 37    | 25    | 19 |                |                |
| 19C  | HS    | 4.9     | 17          | 440           | 2 420            | 9             | 1 720            | 1 570      | 11            | 49    | 37    | 32 | A              | A              |
|      | MS    | 3.4     | 8           | 305           | 1 930            | 6             | 1 380            | 1 230      | 7             | 42    | 30    | 25 |                |                |
|      | LS    | 2.5     | 5           | 230           | 1 650            | 5             | 1 190            | 1 040      | 5             | 37    | 25    | 19 |                |                |
| 20C  | HS    | -       | 45          | 420           | 3 270            | 16            | 2 640            | 2 070      | 19            | 51    | 39    | 34 | E              | E              |
|      | MS    | -       | 41          | 355           | 2 860            | 13            | 2 320            | 1 790      | 15            | 47    | 35    | 30 |                |                |
|      | LS    | -       | 34          | 215           | 1 930            | 7             | 1 610            | 1 180      | 8             | 35    | 23    | 18 |                |                |
| 29C  | HS    | 4.9     | 17          | 420           | 3 290            | 16            | 2 610            | 2 040      | 18            | 51    | 39    | 34 | A              | A              |
|      | MS    | 4.2     | 12          | 355           | 2 880            | 13            | 2 290            | 1 770      | 15            | 47    | 35    | 30 |                |                |
|      | LS    | 2.5     | 5           | 215           | 1 960            | 6             | 1 580            | 1 150      | 7             | 35    | 23    | 18 |                |                |
| 30C  | HS    | -       | 77          | 655           | 5 070            | 25            | 4 420            | 3 340      | 30            | 58    | 46    | 40 | D              | D              |
|      | MS    | -       | 56          | 520           | 4 090            | 17            | 3 600            | 2 680      | 20            | 51    | 39    | 34 |                |                |
|      | LS    | -       | 40          | 405           | 3 240            | 12            | 2 880            | 2 110      | 13            | 45    | 33    | 27 |                |                |
| 39C  | HS    | 6.7     | 38          | 655           | 5 100            | 25            | 4 390            | 3 310      | 29            | 58    | 46    | 40 | A              | A              |
|      | MS    | 5.3     | 21          | 520           | 4 120            | 17            | 3 560            | 2 650      | 20            | 51    | 39    | 34 |                |                |
|      | LS    | 3       | 6           | 290           | 2 500            | 7             | 2 220            | 1 580      | 9             | 40    | 28    | 21 |                |                |

### 4-pipe

| 42KY | Speed | Voltage | Input Power | Air flow rate | Heating capacity | Pressure drop | Cooling capacity |            | Pressure drop | Lw    | LP    | NR | EUROVENT FCEER | EUROVENT FCCOP |
|------|-------|---------|-------------|---------------|------------------|---------------|------------------|------------|---------------|-------|-------|----|----------------|----------------|
|      |       | V       | W           | m3/h          | W                | kPa           | Total W          | Sensible W | kPa           | dB(A) | dB(A) |    | Class          | Class          |
| 20D  | HS    | -       | 45          | 420           | 2 820            | 21            | 2 090            | 1 840      | 10            | 51    | 39    | 34 | E              | E              |
|      | MS    | -       | 41          | 355           | 2 580            | 18            | 1 910            | 1 620      | 8             | 47    | 35    | 30 |                |                |
|      | LS    | -       | 34          | 215           | 2 020            | 12            | 1 450            | 1 120      | 5             | 35    | 23    | 18 |                |                |
| 29D  | HS    | 4.9     | 17          | 420           | 2 830            | 21            | 2 060            | 1 810      | 10            | 51    | 39    | 34 | A              | A              |
|      | MS    | 4.2     | 12          | 355           | 2 600            | 18            | 1 880            | 1 600      | 8             | 47    | 35    | 30 |                |                |
|      | LS    | 2.5     | 5           | 215           | 2 040            | 12            | 1 420            | 1 090      | 5             | 35    | 23    | 18 |                |                |
| 30D  | HS    | -       | 77          | 655           | 3 460            | 28            | 3 790            | 3 040      | 19            | 58    | 46    | 40 | D              | E              |
|      | MS    | -       | 56          | 520           | 3 000            | 22            | 3 140            | 2 470      | 13            | 51    | 39    | 34 |                |                |
|      | LS    | -       | 40          | 405           | 2 600            | 17            | 2 570            | 1 980      | 9             | 45    | 33    | 27 |                |                |
| 39D  | HS    | 5.3     | 21          | 520           | 2 820            | 25            | 2 910            | 2 280      | 13            | 51    | 39    | 34 | A              | B              |
|      | MS    | 4.6     | 15          | 455           | 2 610            | 22            | 2 620            | 2 020      | 11            | 48    | 36    | 30 |                |                |
|      | LS    | 3       | 6           | 290           | 2 110            | 15            | 1 920            | 1 410      | 6             | 40    | 28    | 21 |                |                |

### EUROVENT conditions

Cooling mode: (2 pipes & 4 pipes): Air inlet temperature: 27°C/19°C CBH, Water inlet/outlet temperature: 7°C/12°C

Heating mode: (2 pipes): Air inlet Temperature: 20°C, water inlet temperature: 50°C, same water flow rate as in cooling

Heating mode: (4 pipes): Inlet temperature: 20°C, water inlet/outlet temperature: 70°C/60°C

The sound pressure levels and NR levels are based on hypothetical attenuation of the room of -12dB(A).



















| Water flow rate | Water flow rate | $\Delta T$ | Size    | 20C + 900W |       |       |       |       | 30C + 1200W |       |       |       |       |
|-----------------|-----------------|------------|---------|------------|-------|-------|-------|-------|-------------|-------|-------|-------|-------|
|                 |                 |            |         | Speeds     | 1     | 2     | 3     | 4     | 5 (max)     | 1     | 2     | 3     | 4     |
|                 |                 |            | Size    | 29C + 900W |       |       |       |       | 39C + 1200W |       |       |       |       |
| I/s             | I/h             |            | Voltage | 2,5 V      | 3,4 V | 4,2 V | 4,9 V | 6,7 V | 4,1 V       | 4,6 V | 5,3 V | 6,7 V | 7,9 V |
| 0,03            | 100             | 25         | TH      | 1,23       | 1,32  | 1,41  | 1,48  | 1,62  | 1,67        | 1,75  | 1,84  | 1,98  | 2,07  |
| 0,06            | 200             | 25         | TH      | 1,49       | 1,7   | 1,87  | 2,02  | 2,34  | 2,2         | 2,36  | 2,54  | 2,87  | 3,1   |
| 0,08            | 300             | 25         | TH      | 1,58       | 1,84  | 2,06  | 2,24  | 2,67  | 2,44        | 2,65  | 2,9   | 3,36  | 3,71  |
| 0,11            | 400             | 25         | TH      | 1,62       | 1,91  | 2,16  | 2,37  | 2,86  | 2,57        | 2,8   | 3,09  | 3,64  | 4,07  |
| 0,14            | 500             | 25         | TH      | 1,64       | 1,95  | 2,21  | 2,44  | 2,97  | 2,64        | 2,89  | 3,2   | 3,81  | 4,29  |
| 0,18            | 650             | 25         | TH      | 1,66       | 1,99  | 2,27  | 2,5   | 3,07  | 2,7         | 2,97  | 3,31  | 3,97  | 4,5   |
| 0,22            | 800             | 25         | TH      | 1,67       | 2,02  | 2,3   | 2,55  | 3,14  | 2,74        | 3,02  | 3,37  | 4,06  | 4,62  |
| 0,26            | 950             | 25         | TH      | 1,68       | 2,03  | 2,32  | 2,58  | 3,19  | 2,77        | 3,05  | 3,41  | 4,13  | 4,71  |
| 0,31            | 1100            | 25         | TH      | 1,69       | 2,05  | 2,34  | 2,6   | 3,23  | 2,78        | 3,08  | 3,44  | 4,18  | 4,78  |
| 0,35            | 1250            | 25         | TH      | 1,69       | 2,05  | 2,36  | 2,62  | 3,26  | 2,8         | 3,1   | 3,47  | 4,21  | 4,83  |
| 0,39            | 1400            | 25         | TH      | 1,7        | 2,06  | 2,37  | 2,63  | 3,28  | 2,81        | 3,11  | 3,48  | 4,24  | 4,87  |
| 0,43            | 1550            | 25         | TH      |            |       |       |       |       | 2,82        | 3,12  | 3,5   | 4,27  | 4,9   |
| 0,03            | 100             | 30         | TH      | 1,5        | 1,62  | 1,72  | 1,81  | 1,99  | 2,02        | 2,11  | 2,22  | 2,39  | 2,5   |
| 0,06            | 200             | 30         | TH      | 1,8        | 2,06  | 2,27  | 2,45  | 2,84  | 2,67        | 2,86  | 3,09  | 3,49  | 3,77  |
| 0,08            | 300             | 30         | TH      | 1,9        | 2,22  | 2,49  | 2,71  | 3,23  | 2,95        | 3,2   | 3,51  | 4,07  | 4,5   |
| 0,11            | 400             | 30         | TH      | 1,95       | 2,31  | 2,6   | 2,86  | 3,45  | 3,1         | 3,38  | 3,73  | 4,4   | 4,92  |
| 0,14            | 500             | 30         | TH      | 1,98       | 2,36  | 2,67  | 2,94  | 3,58  | 3,18        | 3,49  | 3,87  | 4,6   | 5,18  |
| 0,18            | 650             | 30         | TH      | 2          | 2,4   | 2,73  | 3,02  | 3,71  | 3,26        | 3,58  | 3,98  | 4,78  | 5,42  |
| 0,22            | 800             | 30         | TH      | 2,02       | 2,43  | 2,77  | 3,07  | 3,79  | 3,3         | 3,64  | 4,06  | 4,9   | 5,58  |
| 0,26            | 950             | 30         | TH      | 2,03       | 2,45  | 2,8   | 3,11  | 3,85  | 3,33        | 3,68  | 4,11  | 4,98  | 5,68  |
| 0,31            | 1100            | 30         | TH      | 2,04       | 2,46  | 2,82  | 3,13  | 3,9   | 3,35        | 3,71  | 4,15  | 5,03  | 5,76  |
| 0,35            | 1250            | 30         | TH      | 2,04       | 2,48  | 2,84  | 3,16  | 3,93  | 3,37        | 3,73  | 4,18  | 5,08  | 5,82  |
| 0,39            | 1400            | 30         | TH      | 2,05       | 2,49  | 2,85  | 3,17  | 3,96  | 3,39        | 3,75  | 4,2   | 5,11  | 5,87  |
| 0,43            | 1550            | 30         | TH      |            |       |       |       |       | 3,4         | 3,76  | 4,22  | 5,14  | 5,91  |
| 0,03            | 100             | 35         | TH      | 1,77       | 1,92  | 2,04  | 2,15  | 2,36  | 2,37        | 2,48  | 2,61  | 2,81  | 2,94  |
| 0,06            | 200             | 35         | TH      | 2,12       | 2,42  | 2,67  | 2,88  | 3,34  | 3,14        | 3,37  | 3,64  | 4,11  | 4,45  |
| 0,08            | 300             | 35         | TH      | 2,23       | 2,61  | 2,92  | 3,18  | 3,8   | 3,46        | 3,76  | 4,12  | 4,78  | 5,29  |
| 0,11            | 400             | 35         | TH      | 2,28       | 2,7   | 3,05  | 3,35  | 4,05  | 3,63        | 3,97  | 4,37  | 5,16  | 5,77  |
| 0,14            | 500             | 35         | TH      | 2,31       | 2,76  | 3,12  | 3,44  | 4,2   | 3,73        | 4,09  | 4,53  | 5,39  | 6,08  |
| 0,18            | 650             | 35         | TH      | 2,34       | 2,81  | 3,2   | 3,53  | 4,34  | 3,81        | 4,19  | 4,66  | 5,6   | 6,35  |
| 0,22            | 800             | 35         | TH      | 2,36       | 2,84  | 3,24  | 3,59  | 4,44  | 3,86        | 4,26  | 4,75  | 5,73  | 6,53  |
| 0,26            | 950             | 35         | TH      | 2,37       | 2,87  | 3,28  | 3,64  | 4,51  | 3,9         | 4,31  | 4,81  | 5,83  | 6,66  |
| 0,31            | 1100            | 35         | TH      | 2,38       | 2,89  | 3,3   | 3,67  | 4,56  | 3,93        | 4,34  | 4,85  | 5,89  | 6,75  |
| 0,35            | 1250            | 35         | TH      | 2,39       | 2,9   | 3,32  | 3,69  | 4,6   | 3,95        | 4,37  | 4,89  | 5,95  | 6,82  |
| 0,39            | 1400            | 35         | TH      | 2,39       | 2,91  | 3,34  | 3,71  | 4,63  | 3,96        | 4,39  | 4,91  | 5,99  | 6,88  |
| 0,43            | 1550            | 35         | TH      |            |       |       |       |       | 3,97        | 4,4   | 4,93  | 6,02  | 6,92  |

$\Delta T$   
EAT  
EWT

Water temperature difference: EWT-OWT (K)  
Inlet air temperature, ( $^{\circ}$ C)  
Water inlet temperature ( $^{\circ}$ C)

OWT  
TH  
Water outlet temperature ( $^{\circ}$ C)  
Heating capacity (kW)









## SOUND POWER LEVEL

| Size    | Speed    |          | Octave band frequency (Hz) |     |     |      |      |      | Sound power | Sound pressure level* | Comfort level |
|---------|----------|----------|----------------------------|-----|-----|------|------|------|-------------|-----------------------|---------------|
|         | AC motor | EC motor | 125                        | 250 | 500 | 1000 | 2000 | 4000 |             |                       |               |
| 42KY    | 5        | 6.7 V    | 57                         | 59  | 57  | 54   | 47   | 46   | 59          | 47                    | 42            |
|         | 4        | 4.9 V    | 52                         | 51  | 49  | 42   | 38   | 32   | 49          | 37                    | 32            |
|         | 3        | 4.2 V    | 50                         | 48  | 45  | 38   | 34   | 24   | 46          | 34                    | 29            |
|         | 2        | 3.4 V    | 44                         | 44  | 41  | 32   | 30   | 17   | 41          | 29                    | 25            |
|         | 1        | 2.5 V    | 42                         | 40  | 36  | 27   | 28   | 17   | 37          | 25                    | 19            |
| 10/19   | 5        | 6.7 V    | 57                         | 58  | 57  | 54   | 49   | 46   | 59          | 47                    | 42            |
|         | 4        | 4.9 V    | 50                         | 52  | 50  | 45   | 40   | 34   | 51          | 39                    | 34            |
|         | 3        | 4.2 V    | 47                         | 49  | 47  | 40   | 36   | 27   | 47          | 35                    | 30            |
|         | 2        | 3.4 V    | 44                         | 45  | 42  | 33   | 31   | 18   | 42          | 30                    | 25            |
|         | 1        | 2.5 V    | 40                         | 37  | 34  | 25   | 25   | <15  | 35          | 23                    | 18            |
| 20/29   | 5        | 7.9 V    | 64                         | 63  | 60  | 56   | 51   | 51   | 62          | 50                    | 44            |
|         | 4        | 6.7 V    | 60                         | 59  | 56  | 52   | 46   | 47   | 58          | 46                    | 40            |
|         | 3        | 5.3 V    | 54                         | 54  | 50  | 43   | 41   | 32   | 51          | 39                    | 34            |
|         | 2        | 4.6 V    | 50                         | 51  | 47  | 40   | 38   | 28   | 48          | 36                    | 30            |
|         | 1        | 4.1 V    | 48                         | 49  | 44  | 37   | 34   | 23   | 45          | 33                    | 27            |
| 30/39   | 5        | 6.7 V    | 57                         | 58  | 57  | 54   | 49   | 46   | 59          | 47                    | 42            |
|         | 4        | 4.9 V    | 50                         | 52  | 50  | 45   | 40   | 34   | 51          | 39                    | 34            |
|         | 3        | 4.2 V    | 47                         | 49  | 47  | 40   | 36   | 27   | 47          | 35                    | 30            |
|         | 2        | 3.4 V    | 44                         | 45  | 42  | 33   | 31   | 18   | 42          | 30                    | 25            |
|         | 1        | 2.5 V    | 40                         | 37  | 34  | 25   | 25   | <15  | 35          | 23                    | 18            |
| 20D/29D | 5        | 7.9 V    | 64                         | 63  | 60  | 56   | 51   | 51   | 62          | 50                    | 44            |
|         | 4        | 6.7 V    | 60                         | 59  | 56  | 52   | 46   | 47   | 58          | 46                    | 40            |
|         | 3        | 5.3 V    | 54                         | 54  | 50  | 43   | 41   | 32   | 51          | 39                    | 34            |
|         | 2        | 4.6 V    | 50                         | 51  | 47  | 40   | 38   | 28   | 48          | 36                    | 30            |
|         | 1        | 4.1 V    | 48                         | 49  | 44  | 37   | 34   | 23   | 45          | 33                    | 27            |
| 30D/39D | 5        | 7.9 V    | 64                         | 63  | 60  | 56   | 51   | 51   | 62          | 50                    | 44            |
|         | 4        | 6.7 V    | 60                         | 59  | 56  | 52   | 46   | 47   | 58          | 46                    | 40            |
|         | 3        | 5.3 V    | 54                         | 54  | 50  | 43   | 41   | 32   | 51          | 39                    | 34            |
|         | 2        | 4.6 V    | 50                         | 51  | 47  | 40   | 38   | 28   | 48          | 36                    | 30            |
|         | 1        | 4.1 V    | 48                         | 49  | 44  | 37   | 34   | 23   | 45          | 33                    | 27            |

\*Level of sound pressure and comfort with a hypothetical acoustic attenuation of the room of -12dB(A)

## TECHNICAL CHARACTERISTICS

### Coil capacity (L)

|                               |         |       |       |
|-------------------------------|---------|-------|-------|
| 42KY cassette                 | 10/19   | 20/29 | 30/39 |
| 2-pipe coil                   | 0.4     | 0.8   | 1.1   |
| 2-pipe coil + electric heater | -       | 0.6   | 1     |
| 4-pipe coil                   | Cooling | -     | 0.6   |
|                               | Heating | -     | 0.2   |

### Diameters of coil couplings

Coil connection type: flush fit female threaded union nuts  
 Valve connection type: install flush fit male threaded unions

|                               |         |        |        |
|-------------------------------|---------|--------|--------|
| 42KY cassette                 | 10/19   | 20/29  | 30/39  |
| 2-pipe coil                   | G 1/2"  | G 1/2" | G 1/2" |
| 2-pipe coil + electric heater | -       | G 1/2" | G 1/2" |
| 4-pipe coil                   | Cooling | -      | G 1/2" |
|                               | Heating | -      | G 1/2" |

### Motor electrical specifications

| 42KY              | Motor code | AC asynchronous motor |      |      | LEC motor |      |      |
|-------------------|------------|-----------------------|------|------|-----------|------|------|
|                   |            | 10                    | 20   | 30   | 19        | 29   | 39   |
| Input power (W)   | V5         | 70                    | 70   | 101  | 38        | 38   | 56   |
|                   | V4         | 45                    | 45   | 77   | 17        | 17   | 38   |
|                   | V3         | 41                    | 41   | 56   | 12        | 12   | 21   |
|                   | V2         | 38                    | 38   | 47   | 8         | 8    | 15   |
|                   | V1         | 34                    | 34   | 40   | 5         | 5    | 11   |
| Input current (A) | V5         | 0,30                  | 0,30 | 0,32 | 0,18      | 0,18 | 0,40 |
|                   | V4         | 0,21                  | 0,21 | 0,29 | 0,09      | 0,09 | 0,28 |
|                   | V3         | 0,19                  | 0,19 | 0,24 | 0,07      | 0,07 | 0,17 |
|                   | V2         | 0,18                  | 0,18 | 0,22 | 0,04      | 0,04 | 0,13 |
|                   | V1         | 0,17                  | 0,17 | 0,21 | 0,02      | 0,02 | 0,10 |

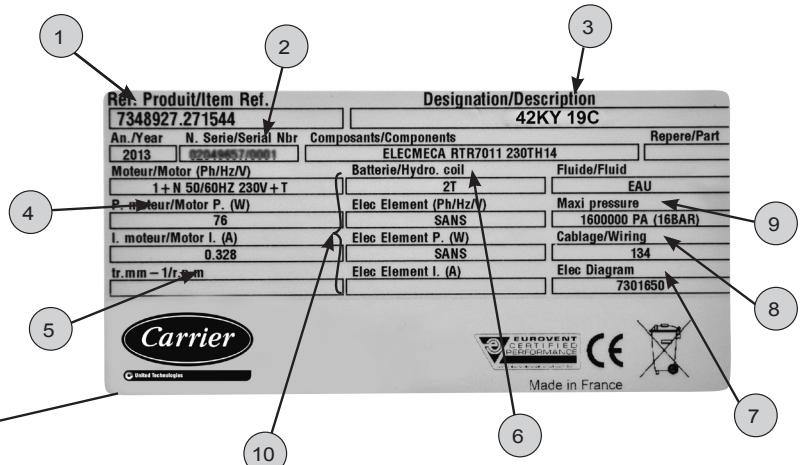
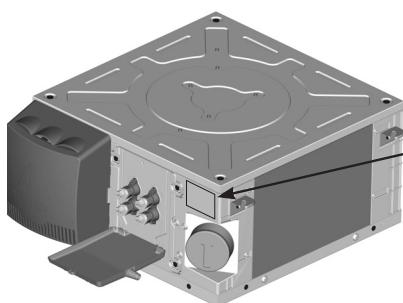
Motor operating range: Min recovery T°C: +5°C

Max recovery T°C: 40°C

### Name plate of the unit

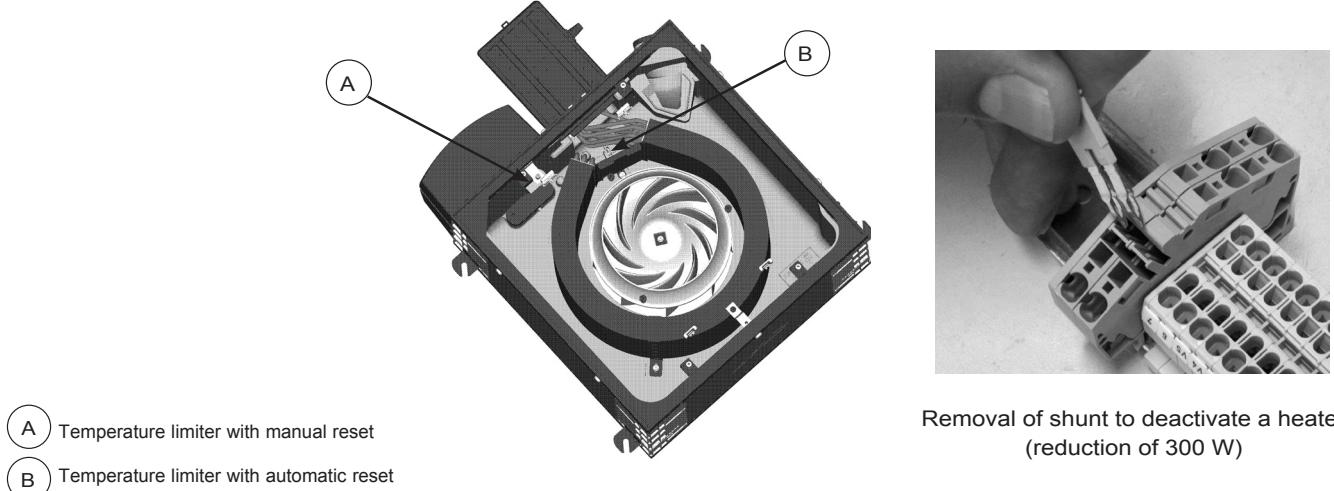
The name plate contains all the information required to identify the unit and its configuration. This plate is positioned on the technical face containing all the connections, above the fresh air inlet.

- ① Code
- ② Serial number
- ③ Description of the unit
- ④ Rated motor output
- ⑤ Motor rotation speed
- ⑥ Coil type
- ⑦ Wiring diagram reference
- ⑧ Motor speed wiring
- ⑨ Maximum service pressure
- ⑩ Electric heater specifications (if fitted)



## Electrical heaters

2 single pipe 230/1/50 electrical elements inserted into the aluminium housing and bent around the hydraulic coil.



Removal of shunt to deactivate a heater  
(reduction of 300 W)

## Electrical heater specifications - Input voltage 230V - 1 ph - 50Hz

|                             |       |       |       |
|-----------------------------|-------|-------|-------|
| <b>42KY cassette</b>        | 10/19 | 20/29 | 30/39 |
| <b>Electrical power (W)</b> | -     | 900   | 1200  |
| <b>Input current (A)</b>    | -     | 3.6   | 4.8   |

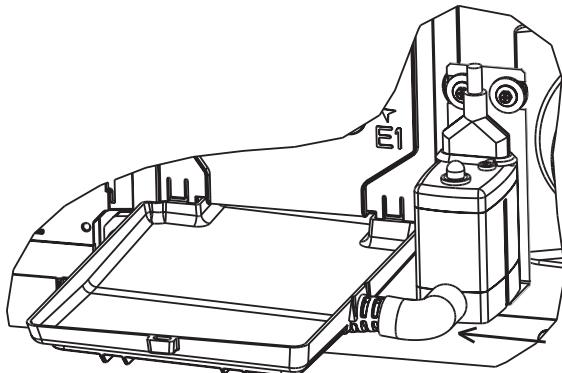
## Limitations of use

|                           |                                   |   |
|---------------------------|-----------------------------------|---|
| <b>42KY cassette</b>      | Operating pressure<br>max. 16 Bar | Minimum water inlet temperature: 6°C                            |
|                           |                                   | Maximum water inlet temperature:                                |
|                           |                                   | 4-pipe coil: 80°C   |
|                           |                                   | 2-pipe coil: 70°C   |
|                           |                                   | 2-pipe coil + electric heater: 55°C (min air flow rate 200m3/h) |
| <b>Indoor temperature</b> | -                                 | Minimum temperature: 5°C  |
|                           | -                                 | Maximum temperature: 40°C                                       |
| <b>Power supply</b>       | Nominal usage limitations         | Min 207 - Max 253 V for units without electrical heater         |
|                           |                                   | Min 216 - Max 244 V for units with electrical heater            |

## OPTIONS (FACTORY ASSEMBLED)

| Description                                 |
|---|
| Condensate drain pump                       |
| Lift kit                                    |
| Frame for 675 x 675 suspended ceiling tiles |
| Finish frame for STAFF ceiling              |
| Hydraulic coil with protected blades        |

## Condensate drain pump



|  |                                   |
|--|-----------------------------------|
| Maximum flow rate  | 20 l/h                            |
| Discharge height   | 10 m (flow rate = 4l/h)           |
| Maximum pressure   | 14 m (flow rate = 0l/h)           |
| Sound level at 1 m as per EN ISO 3744<br>(Measurements made at the LNE metrology lab,<br>pump in water,<br>outside of application) | 23 dBA                            |
| Sound level within application at 1 m:<br>(measurements taken at the Sauermann acoustic<br>lab, pump in water)                     | < or = 28 dBA                     |
| Power supply   | 230 V - 50/60 Hz - 14 W           |
| Insulation class   | Double insulation                 |
| Detection levels   | ON: 18 mm, OFF: 12 mm, AL: 21 mm  |
| Safety contact   | NF 8 A resistive - 250 V          |
| Heat protection (overheating)  | 90°C (automatic restart)          |
| Operating cycle  | 30%: 3s ON - 7s OFF               |
| Protection   | IP54                              |
| Safety standard  | CE                                |
| RoHS Directive   | Compliant                         |
| DEEE Directive   | Compliant                         |
| Packaging  | 0.390 kg - L 112 x W 91 x H 91 mm |

### ACTUAL FLOW RATES (l/h)

| Discharge height | Total pipe length (internal Ø 6mm) |            |            |            |
|------------------|------------------------------------|------------|------------|------------|
|                  | 5 m (l/h)                          | 10 m (l/h) | 20 m (l/h) | 30 m (l/h) |
| 0 m              | 20                                 | 19         | 18         | 17         |
| 2 m              | 16                                 | 15         | 14         | 13,5       |
| 4 m              | 11,5                               | 11         | 10,5       | 10         |
| 6 m              |                                    | 8,5        | 7,5        | 6,5        |
| 8 m              |                                    | 6          | 5          | 4          |
| 10 m             |                                    | 4          | 3,5        | 2,5        |

### Operating limit:

Draining: Ø 6 mm int. flexible pipe, Ø 8 mm end piece. This accessory must always be used with a valve control device, to ensure valve control of the high safety device when the valve is closed (closure of the condensate drains).

$$\text{Condensate flow rate (l/h)} = \frac{\text{Total P} - \text{Sensible P (W)}}{680}$$

## ACCESSORIES (AVAILABLE SEPARATELY)

| Description  |  |
|--|--|
| Condensate drain pump kit  |  |
| Elastic dampers (4 per device)   |  |
| Extension kit  |  |
| Self-adjustable module kit (diam. 100 mm)  | 15/30/45 m <sup>3</sup> /h<br>60/75/90 m <sup>3</sup> /h |
| AN adapter kit (Diam. 100/125 mm)  |  |
| Frame kit for suspended ceiling (675x675)  |  |
| LEC motor speed control 3 speed ON/OFF unit kit (only for thermostat or controllers not from CARRIER that have 3 230V speed outputs) |  |



Order No.: 10129, 04.2016 - Supersedes order No.: 10129, 02.2016.  
The manufacturer reserves the right to change any product specifications without notice.



Quality and Environment  
Management Systems  
Approval

Manufacturer: Carrier SCS, Montluel, France.  
Printed in the European Union.