EU

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The **BEST** or **NOTHING.**

DUCO

We inspire at **www.duco.eu**

# **WHY** DUCO?

### One-stop-shop for your end-to-end ventilation solution

Complete range of MEV and MVHR ventilation units, air ducts & accessories.

### Smart demand control

The room is **only ventilated when necessary** and in the correct amount. $CO_2$ concentration and air humidity are used as indicators. This helps avoiding unnecessary heat loss while guaranteeing an optimal indoor climate.

### High energy conversion efficiency

The combination of dynamic air distribution filters and **high performance heat exchangers** results in very high efficiency ratios.

### The quietest systems

A comfortable indoor climate is created by **whisper-quiet ventilation systems**. DUCO excels in acoustics, especially where it matters most: the living areas and bedrooms.

### Connectivity

The optional Duco Connectivity Board offers the possibility of integrating the DUCO ventilation systems with home automation and building management systems through **REST API** (local or via the cloud) or **Modbus TCP** (local). Both are possible via Ethernet or Wi-Fi.

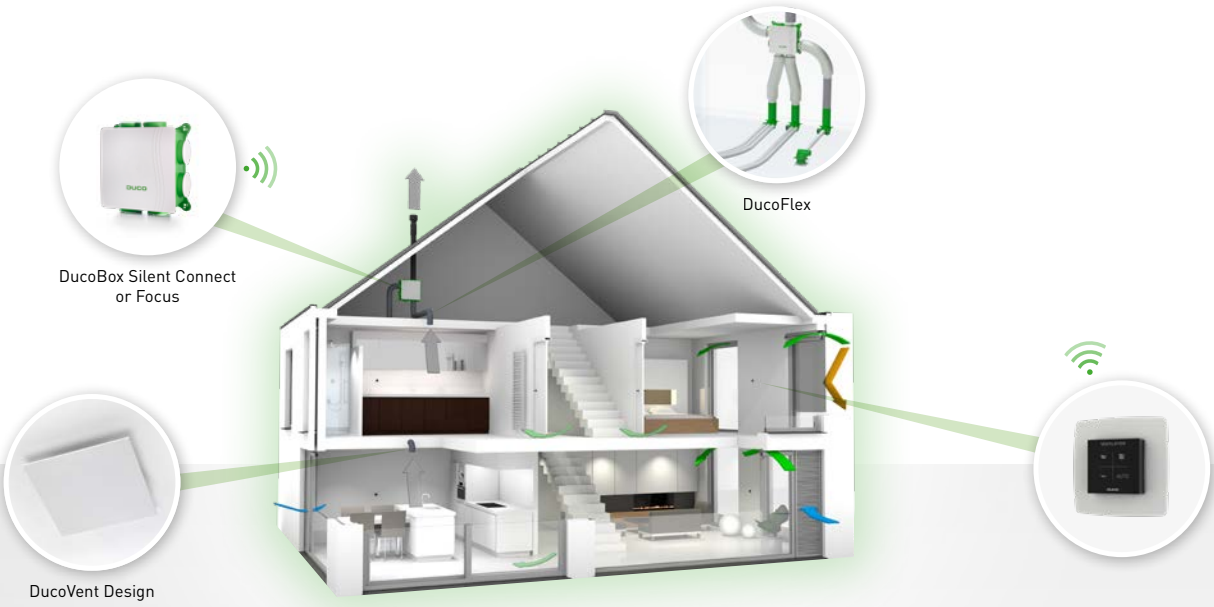
### Automatic calibration

The automatic calibration, whereby the measuring and adjustment technology is based on the principles of calibration under constant pressure, always offers a 100 % guarantee of a **qualitative end result** and translates into a 50 % saving in set-up time for the installer.

# **UNIQUE** AT DUCO

**MEV SYSTEM**

Unlike a ventilation system that extracts air from the entire house, including healthy air, the **DucoBox Focus** is a ventilation unit that applies **zonal ventilation**. The internal control valves of the DucoBox Focus extract polluted and/or moist air zonally. This means that you only ventilate where necessary, when necessary and in the right amount, to remove the polluted air as quickly as possible.




## 100% automatic

**Demand-controlled ventilation** based on $CO_2$, Humidity and temperature.

## Optimal indoor climate

The Duco Focus System **ventilates only where and when needed, and in the right amount**.

## Acoustic comfort

The **QUIETEST** and **SMARTEST** ventilation boxes on the market.

## Aesthetic & minimalist

DucoVent Design: **Aesthetic and functional** aluminium vents.

## Highest energy gain

Controlled supply and extraction = 100 % controlled ventilation.

# DucoBox Silent Connect

The **QUIETEST** MEV system!


**Intelligent demand control**
Room or box sensors based on $CO_2$ and humidity measurement

**Carefree night's sleep**
Minimum sound power (< 27 dB(A) in occupied zones)

**Save on your energy bill**
Financially attractive thanks to energy-efficient DC motor

# THE DUCOBOX IN FIGURES


## Physical characteristics

| | |
|---|---|
| **Dimensions (W x H x D)** | 480 x 480 x 194 mm |
| **Weight** | 4,3 kg |
| **Connections** | **Extract areas**<br>7 x ∅ 125 mm<br><br>**Exhaust to the outside**<br>1 x ∅ 125 mm |

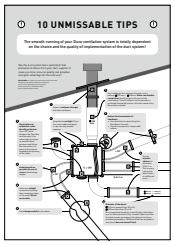
## Technical properties

| | | | | **Sound power level (db(A))*** | |
|---|---|---|---|---|---|
| **Flow rate** ($m^3/h$) | **Pressure** (Pa) | **Power consumption** (W) | **Maximum power** (W) | **Supply** | **Casing radiation** |
| **LOW** DUCTING RESISTANCE | | | | | |
| 100 | 70 | 10 | 11 | 39 | 35 |
| 100 | 100 | 13 | 13 | 43 | 36 |
| 150 | 100 | 15 | 16 | 44,5 | 37 |
| 250 | 100 | 27 | 29 | 50 | 43,5 |
| 300 | 100 | 42 | 44 | 53,5 | 44 |
| 350 | 100 | 57 | 59 | 57,5 | 46,5 |
| **HIGH** DUCTING RESISTANCE | | | | | |
| 150 | 150 | 20 | 22 | 47,5 | 39,5 |
| 225 | 150 | 32 | 43 | 50 | 41,5 |
| 250 | 150 | 34 | 48 | 53 | 43 |
| 300 | 150 | 48 | 63 | 54,5 | 46,5 |
| 325 | 150 | 58 | 72 | 55,5 | 48 |
| 350 | 150 | 60 | 76 | 57,5 | 49 |
| 400 | 150 | 81 | 84 | 60 | 52 |

* tested according to EN ISO 5135/3741

**Discover the magic of zonal ventilation**

duco.eu/zonal-ventilation




Please refer to page 82 for essential installation tips!

# DucoBox Silent Connect

MEV system

Up to **400 m³/h** at 150 Pa

The DucoBox Silent is an extraction fan that provides **central extraction** within DUCO's Demand-Controlled Natural Ventilation Systems (DCNVS). The DucoBox Silent is both the system's motor and the master unit to which control components can be paired.

This **quiet**, **compact**, **durable** and highly **energy-efficient extractor fan** removes moist and/or polluted air when needed and in the right quantity. Simple design and an efficient DC motor ensure long service life.

## FEATURES

| | | |
|---|---|---|
| **Width x Height x Depth:** 480 x 480 x 194 mm<br>**Weight:** 4,3 kg<br>**Extraction capacity at 150 Pa:** 400 m³/h<br>**Power supply:** 230 VAC<br>**Energy label:** class B in a system with at least two sensors | **Communication:** RF and Wired. Expandable with Duco Connectivity Board (see 'Options & accessories') for REST API (local or cloud) and Modbus TCP (local), both via Ethernet / Wi-Fi | **Peak power:** 84 W<br>**Air duct connections:**<br>Extraction areas:<br>7 x ∅ 125 mm<br>Extraction to the outside:<br>1 X ∅ 125 mm |

## VENTILATION UNIT


| Type | Plug | |
|---|---|---|
| DucoBox Silent **Standard** (UK) | G | Only possible in All-in-one kit |
| DucoBox Silent **Connect** (UK) | G | Only possible in All-in-one kit |

## ALL-IN-ONE KITS DucoBox Silent

DUCO All-in-one kits include both an extractor fan and associated control components.

| | | |
|---|---|---|
| **All-in-one DucoBox Silent (UK) + RH** | 1 x DucoBox Silent Standard (UK)<br>1 x Humidity Box sensor | 0000-4490 |
| **All-in-one DucoBox Silent Connect (UK) + RH** | 1 x DucoBox Silent Connect (UK)<br>1 x Humidity Box sensor | 0000-4808 |

# CONTROL COMPONENTS DucoBox Silent

## BOX SENSORS

Box sensors can be installed very easily and quickly and provide **$CO_2$ and/or moisture measurement in an air duct**. They are wired directly to the circuit board. This means that no wiring for room sensors needs to be provided.

A DucoBox Silent contains **a maximum of two box sensors** – one $CO_2$ Box sensor and/or one Humidity Box Sensor – each of which can be clicked separately into a specific duct opening or together into one duct opening of the DucoBox.

| **Peak power:** < 1 W | **Stand-by power:** < 1 W | **Power supply:** From the DucoBox |
|---|---|---|

| | |
|---|---|
| $CO_2$ Box sensor | **0000-4216** |
| Humidity Box sensor | **0000-4218** |

## EXTERNAL CONTROL COMPONENTS

The DucoBox Silent can be connected to the following external control components.


| | |
|---|---|
| **User controls and room sensors** | see page 56 |
| **Switch sensor (for switch detection)** | see page 58 |

# OPTIONS & ACCESSORIES DucoBox Silent Connect

| Silent Plus Kit | 0000-4182 |
|---|---|

The Silent Plus Kit provides additional acoustic damping of up to 3 dB(A)! Three composite foam pads per box, placed as close to the extraction as possible, are sufficient.

| Duco Connectivity Board | 0000-4810 |
|---|---|

The optional Duco Connectivity Board can be applied within the DucoBox Silent Connect, DucoBox Focus and DucoBox Energy. This PCB enables interfacing towards home automation and building management systems via REST API (locally or via the cloud) or Modbus TCP (locally). Both are possible via Ethernet or Wi-Fi. The Duco Connectivity Board also enables the Duco Installation App to be used.

| Breech Y-piece **2 x 125 to 1 x 160** | 0000-4334 |
|---|---|

This piece allows a duct of ∅ 160 mm to be connected to two spigots of the DucoBox Silent (Connect)◇∅ 125 mm). Splitting the flow between two ducts reduces resistance, resulting in quieter and more energy-efficient operation.

| Reducer 160/125 | 0000-4543 |
|---|---|

Reducer from ∅ 125 mm (DucoBox spigot) to ∅ 160 mm (air duct).

| EasySwitch | 0000-5134 |
|---|---|

This 'universal' plate allows you to replace an outdated ventilation box in a renovation project without cutting and breaking with the DucoBox Silent (Connect) or Focus. After fitting against the wall, the unit can easily be clicked onto the plate, resulting in vibration-free operation during air extraction.

| Coaxial cable set 8 m | 0000-4418 |
|---|---|

The set comprises an 8 m long coaxial cable with pre-fitted connectors at both ends. Using this set, the antenna of the DucoBox Silent Connect, DucoBox Focus or DucoBox Energy devices can be moved, if necessary, to a place where the RF range is optimal.

| Duco Power supply 230VAC-24VDC/20W + casing | 0000-4763 |
|---|---|

The Duco Power Supply 230VAC-24VDC/20W is the best solution to power Duco Wired components from a central 230V connection. The component comes with a surface-mounted junction box as standard. The sum of the peak power of all connected DUCO components can be 20W at most when using one Power Supply.

| Flow regulator 15-50 m³/h ∅125 | 0000-4836 |
|---|---|
| Flow regulator 50-100 m³/h ∅125 | 0000-4837 |

The adjustable flow regulator is an element that is placed in a duct to obtain a constant flow in a pressure range between 50 and 250 Pascal. It is used for both supply and extraction.

Renovation

NIGHTBOOST

CONTROL ON EXTRACTION

# Duco Silent Connect System

MEV system | Central ventilation (1 zone | Up to 400 m³/h at 150 Pa


## ALL-IN-ONE KIT

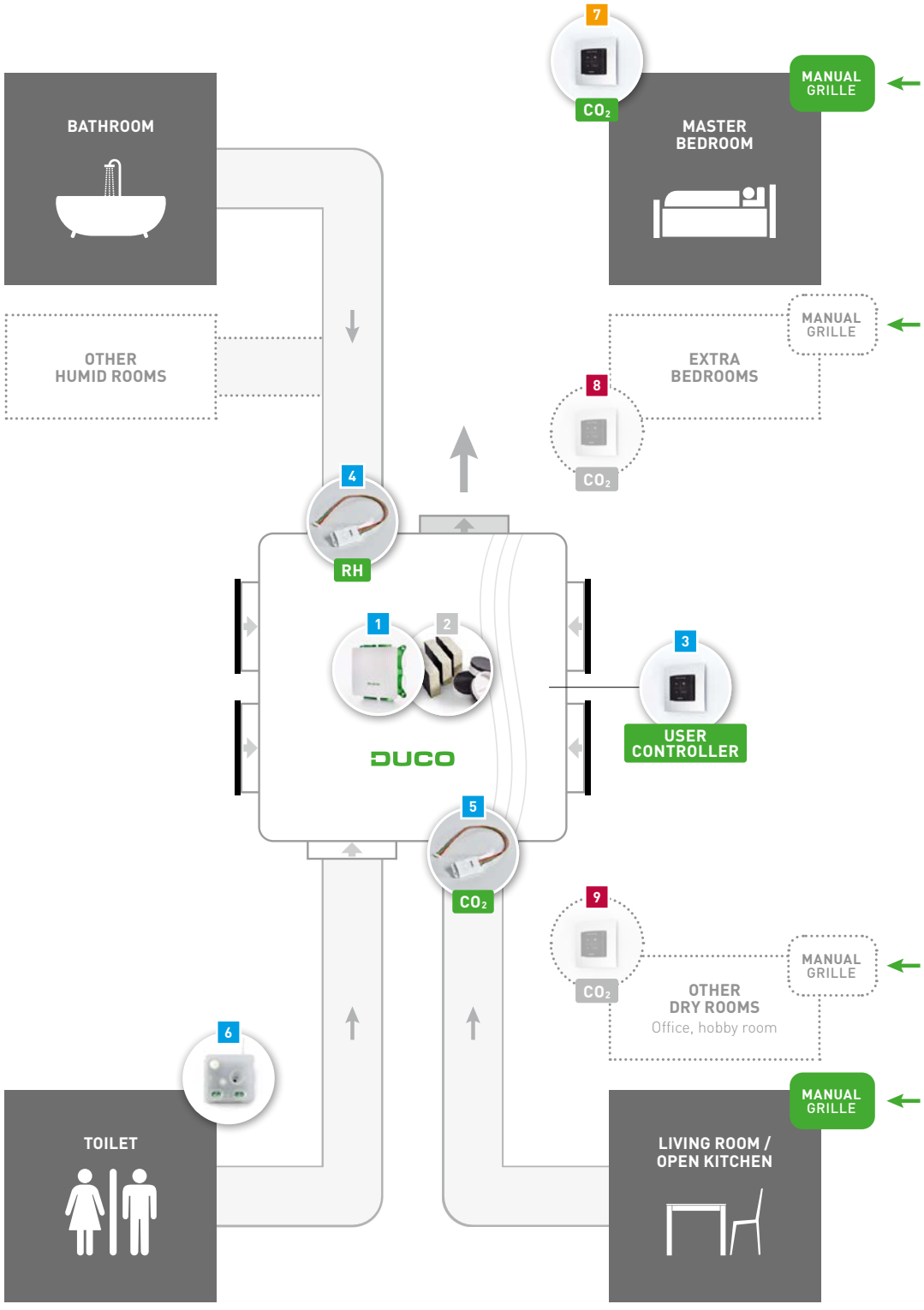
| | | |
|---|---|---|
| ● | All-in-one kit DucoBox Silent **Standard (UK) + RH** | 0000-4490 |
| ● | All-in-one kit DucoBox Silent **Connect (UK) + RH** | 0000-4808 |

The bullet next to the item numbers below indicates which and how many components the basic kit contains.

## COMPONENTS

| | | | | Component on diagram |
|---|---|---|---|---|
|  | DucoBox Silent **Standard** (UK) | ● 1 only in All-in-one | | |
| | DucoBox Silent **Connect** (UK) | ● 1 only in All-in-one | | 1 |
|  | Silent Plus Kit **(3 damping pads + 3 caps)** | 0000-4182 | | 2 |
|  | $CO_2$ Box sensor | 0000-4216 | | 5 |
| | Humidity Box sensor | ● 1 ● 1 0000-4218 | | 4 |
| | | Black | White | |
|  | Remote control **RF / Wired** | 0000-4601 | 0000-4602 | 3 |
| | Remote control **RF / Battery** | 0000-4175 | 0000-4600 | |
| | $CO_2$ Room sensor **with** control **RF/Wired** | 0000-4603 | 0000-4604 | |
| | $CO_2$ Room sensor **without** control **RF / Wired** | 0000-4636 | 0000-4637 | 7 8 9 |
| | Humidity Room sensor **with** control **RF / Wired** | 0000-4605 | 0000-4606 | |
|  | Switch sensor **RF/230 VAC** * | 0000-4174 | | 6 |
|  | Duco Connectivity Board | 0000-4810 | | |
|  | Breech Y-piece **2 x 125 to 1 x 160** | 0000-4334 | | |

→ See chapter 'Vents' from page 66 for more information on all types of vents.




| Energy label | Extraction | Detection | Required components | Optional components |
|---|---|---|---|---|
| B | Central | High-humidity rooms | ■ | ■ |
| B | Central | Damp areas + master bedroom | ■ + ■ | ■ |
| B | Central | Damp rooms + all bedrooms | ■ + ■ + ■ | ■ |

Extraction of stale air

Supply of fresh air

# CONTROL COMPONENTS

With DUCO each ventilation system can be custom assembled using modular control components.

# USER CONTROLS AND ROOM SENSORS

User controllers and room sensors contain **one or both** of the following functions:

### User controller

Using the buttons, the user sets the operation of the ventilation system to the desired level:

- Automatic mode (recommended): $CO_2$ and/or humidity measurements determine the operation of the ventilation system via intelligent algorithms. This guarantees optimum air quality in the most efficient way.
- Manual settings: the ventilation system ventilates at 10% (setting 1), 50% (setting 2) or 100% (setting 3) of the maximum ventilation capacity.

### Measuring air quality

Sensors continuously measure the $CO_2$ or humidity level (as well as temperature) in the rooms where they are installed. The measurements determine the operation of the ventilation system when it is in automatic mode.

All controls and room sensors also function as RF repeaters (except battery-operated controls).

| RF/ Wired models | Battery-powered model |
|---|---|
| **Power supply:** RF: 230 VAC \| Wired: 24 VDC<br>**Width x Height x Depth:** 69 x 69 x 55 mm<br>**Display:** 4 RGB LEDs<br>**Peak power:** 1.8 W \| **Stand-by power:** 1.2 W<br>**Communication:** RF and wired<br>**Colour:** Control: black or white \| Supplied cover plate: white | **Battery:** CR2430 3V coin cell battery<br>**Width x Height x Depth:** 69 x 69 x 17 mm<br>**Display:** 1 bicolor LED<br>**Communication:** RF<br>**Colour:** Control: black or white \| Supplied cover plate: white |

## User controllers + air quality measurement

These contain both a **user controller** and room sensors ($CO_2$ or humidity) for air quality measurement.

| | Black | White |
|---|---|---|
| $CO_2$ Room sensor **with** control **RF/Wired** | 0000-4603 | 0000-4604 |
| Humidity Room sensor **with** control **RF / Wired** | 0000-4605 | 0000-4606 |

## User controller only

These contain only a **user controller**. Ideal in rooms where measurement is not required, or where measurement is done by other means (in the duct).

| | Black | White |
|---|---|---|
| Remote control **RF / Battery** | 0000-4175 | 0000-4600 |
| Remote control **RF / Wired** | 0000-4601 | 0000-4602 |

## Air quality measurement only

Room sensors that are only equipped with a **$CO_2$ sensor**.
Ideal for bedrooms where no user controller is necessary.

| | Black | White |
|---|---|---|
| $CO_2$ Room sensor **without** control **RF / Wired** | 0000-4636 | 0000-4637 |

## WIRED COMPONENTS

Wired / 24 VDC components require a **transformer from 230 VAC to 24 VDC**. It is possible to work with a Duco Power supply as a central power supply to power the component from the wall socket. See "Options & accessories" for the ventilation unit.

# SWITCH SENSOR

The Switch Sensor can perform either or both of the following functions:

**Switch detection:** the ventilation system will perform a function when closing a (two-pole) dry contact. Suitable for toilet detection or overrule setting (only one function per switch sensor).

**Repeater:** the switch sensor is ideally suited as a repeater to strengthen the signal in the event of RF communication problems. In that case the switch sensor must be positioned in such a way that the distance to be bridged and/or interference by obstacles is reduced.

A switch sensor is easy to conceal thanks to its small size.

| | | |
|---|---|---|
| **Width x Height x Depth:** 41 x 37 x 20 mm<br>**Weight:** 21 g<br>**Color:** white | **Peak power:** 0.5 W<br>**Standby power:** 0.4 W | **Power supply:** 230 VAC<br>**Communication:** RF |

**Note:** An external switch sensor is not required if a switch is connected to the onboard dry contact on the circuit board of the 'master' unit (DucoBox or IQ unit). Use a double-pole switch or relay and a 2 x 0.8 mm²cable for this. Refer to the **Onboard dry contact information sheet (L8001001)** for connection instructions.

| | |
|---|---|
| Switch sensor **RF/230 VAC** | **0000-4174** |