

# Natural Ventilation

Product brochure

# Natural Ventilation

With an eye on natural ventilation and free cooling we want to offer solutions for natural ventilation of the room in the most economical way. Open a window to get **fresh air**, for a **healthy indoor climate** and to prevent indoor overheating by **passive ventilative cooling**.

It is common understanding that motorising a window can bring **higher indoor comfort with better indoor air quality** and by active interworking with HVAC (heating, ventilation and cooling) systems we achieve energy efficiency. With a goal to improve your work and living conditions we are focusing on solutions that can work as standalone units or be linked to a smart home network. Euro America solutions with motorised windows for natural ventilation are the same as the rest of our Smart Solutions; concealed, connected, secure and safe.



## E-Invisitop

- Concealed motorised bottom hung window
- Inward opening 175 mm & 200-600m<sup>3</sup>/h air capacity
- Available in MasterLine 8 and MasterLine 10
- Residential, comfort opening
- Natural ventilation

## Motorised windows



## Motorised Ventilation Vent

- Concealed motorised ventilation vent
- Inward 90° side hung window & 250-4000m<sup>3</sup>/h air capacity
- Available in MasterLine 8 and MasterLine 10
- Burglar-proof, rain, mosquito and fall through protection with exterior louvres
- Natural ventilation

MASTERLINE

# E-invisitop

E-invisitop is a comfort motorisation solution for windows that are not easy to reach. A single motor (060.6770.-) integrated and concealed in the vent will not only tilt but also lock and unlock the window.

A secure, high thermal insulating integration for natural ventilation.



## Features

- **Quick assembly** thanks to the plug -&-play principle of the motor
- **Smooth appearance** thanks to the concealed components and motor
- **Use of durable materials:** corrosion-resistant: zinc alloy, synthetic materials, stainless steel, aluminium
- **Silent** electric motor
- **MasterLine 8** or **MasterLine 10** - high insulating systems
- **High-security version available:** E-invisitop Chrono Safe SKG\*\*
- **Easy operation** in unreachable places
- **Easy assembly and disassembly:** the motor is concealed in the vent profile with only one milling operation
- **All the advantages** of Sobinco Chrono fittings

### CHARACTERISTICS

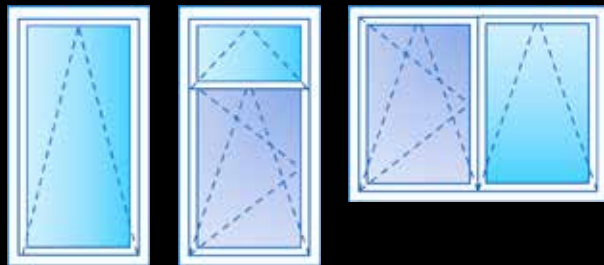
Vent width	Up to 2400 mm
Vent height	Up to 2400 mm
Vent weight	Up to 80 kg
Opening approximately	170 mm
Drive motor	24V DC - 1 A - 650N - IP20
Noise level	Low
Thermal insulation	U <sub>f</sub> = 0.74-1.9 W/m <sup>2</sup> K ; U <sub>w</sub> = 0.7-1.3 W/m <sup>2</sup> K
Perimeter locking	Based on Sobinco Chrono and Chrono Safe SKG** technology
Hinges	Both visible hinges and Invision Pro + GO concealed hinges
Drive motor conformity	2006/42/EG, EN 60335-1:2012-10, EN 60335-2- 103:2016:05, 2014/30EU, RoHS II: 2011/65/EU

# Ventilation options

Our E-invisitop is a residential motorised comfort opening. The bottom hung inward opening window can be used as an air inlet or an air outlet. Depending on multiple parameters, the basic inlet allows for air changes between 200m<sup>3</sup> and 600m<sup>3</sup> per hour.

Window air flow capacity is equal for MasterLine 8 and MasterLine 10.

## Configurations



### WINDOW AIR FLOW CAPACITY

INPUT DATA	1	2	3	4
System	MasterLine 8	MasterLine 8	MasterLine 8	MasterLine 8
Window width (mm)	800	1240	1800	2000
Window height (mm)	550	550	600	1000
Opening type	Tilt	Tilt	Tilt	Tilt
Opening distance (mm)	170	170	170	170
Pressure difference (Pa)	1	2	2	2
RESULTS				
Geometric free area (m <sup>2</sup> )	0.068	0.106	0.158	0.164
Discharge coefficient (Cd)	0.62	0.62	0.62	0.62
Aerodynamic free area (m <sup>2</sup> )	0.042	0.066	0.098	0.102
Air flow capacity (m <sup>3</sup> /s)	<b>0.054</b>	<b>0.120</b>	<b>0.179</b>	<b>0.186</b>
Air flow capacity (m <sup>3</sup> /h)	<b>196</b>	<b>431</b>	<b>645</b>	<b>668</b>
Comparison	yes	yes	yes	yes

MASTERLINE

# Motorised Ventilation Vent

Motorised Ventilation Vent makes the optimal flow of fresh air and healthy indoor climate possible. These concealed vents are limited in width to offer a breath of fresh air while ensuring full safety. This solution is optimised for easy installation and aesthetics as the end pieces are adjustable for optimal fit and paintable to match the colour of the profiles. This solution is seamlessly integrated with MasterLine 8 & 10: windows, doors, MasterPatio sliding system. It is controllable from the inside for open and close function and comes with finger pinch protection, burglar proof, and protection against rain and mosquitos.



## Features

- **1 motor** for vent sizes up to 2m80, and **2 motors** for vent size up to 3m60
- **Quick and easy assembly** - plug & play principle of the motor
- **Smooth appearance** - concealed motor and components
- **Silent** - quiet electric motor
- **MasterLine 8 or MasterLine 10** - high insulating systems
- **High security version optional** - opening protected with a Renson grid on the exterior
- **Easy operation** - one button control
- **Automated** - can be coupled via Smart Home or Natural Ventilation partners
- **Installation guide** - via our online Access Control tool

### CHARACTERISTICS

Vent width	Fixed 250 mm
Vent height	Up to 3600 mm (minimum 800mm)
Opening	Up to 90°
Single chain motor	24V DC - 1 A - 400N
Speed	12mm/s
Thermal insulation	Uw= 1.6 W/m²K MasterLine 8   1.0 W/m²K MasterLine 8-HI+   0.78W/m²K MasterLine 10
Locking	No locking hardware needed
Hinges	Sobinco Invision Go concealed hinges
Burglarproof	RC2 when the optional grid is installed on the exterior
Safety	Motor current protection by default; optional finger pinch gasket is available
Drive motor conformity	2006/42/EG, EN 60335-1:2012-10, EN 60335-2- 103:2016:05, 2014/30EU, RoHS II: 2011/65/EU

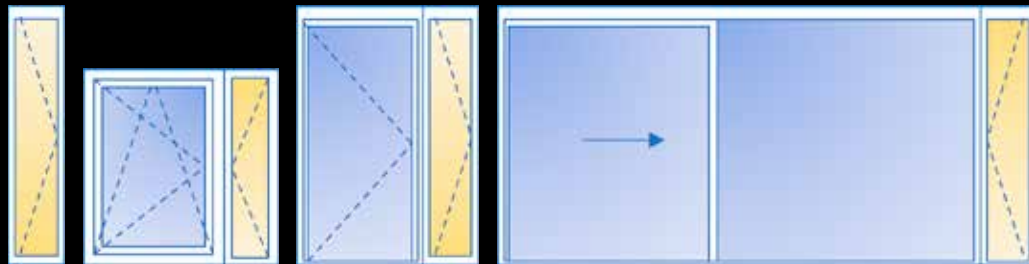
# Ventilation options

Our Motorised Ventilation Vent is a fresh air inlet with high air flow capacity. Depending on multiple parameters, the basic inlet allows for air changes between 250m<sup>3</sup> and 4000m<sup>3</sup> per hour.

This side hung, inward opening solution can be combined with a rain/mosquito/burglarproof louvre, but be aware that the airflow capacity is reduced because of the partial obstruction of the opening.

Window air flow capacity is equal for MasterLine 8 and MasterLine 10.

## Configurations



### WINDOW AIR FLOW CAPACITY

INPUT DATA	1	2	3	4
System	MasterLine 8	MasterLine 8	MasterLine 8	MasterLine 8
Window width (mm)	250	250	250	250
Window height (mm)	800	1200	2600	3600
Opening type	Turn	Turn	Turn	Turn
Opening distance (mm)	Fully open (≥90°)	Fully open (≥90°)	Fully open (≥90°)	Fully open (≥90°)
Pressure difference (Pa)	2	2	2	2
RESULTS				
Geometric free area (m <sup>2</sup> )	0.135	0.209	0.466	0.650
Discharge coefficient (Cd)	0.61	0.61	0.61	0.61
Aerodynamic free area (m <sup>2</sup> )	0.082	0.127	0.284	0.397
Air flow capacity (m <sup>3</sup> /s)	<b>0.150</b>	<b>0.232</b>	<b>0.519</b>	<b>0.724</b>
Air flow capacity (m <sup>3</sup> /h)	<b>541</b>	<b>837</b>	<b>1869</b>	<b>2607</b>
Comparison	yes	yes	yes	yes

## Requirements and safety regulations

- **E-invisitop**
  - System combination: Masterline 8 and MasterLine 10
  - E-invisitop Standard: Fbmin: 800 mm / Fhmin: 450 mm
  - E-invisitop Safe: Fbmin: 800 mm / Fhmin: 500 mm
  - Unlocking and opening time: +- 25 seconds
- **Motorised Ventilation Vent**
  - Seamless integration with Masterline 8 and MasterLine 10 windows and doors, and MasterPatio sliding system.
  - Vent width fixed: 250 mm
  - Vent height: up to 3600 mm (minimum 800 mm)
  - Opening speed: 12 mm/s
  - Burglarproof: RC2 when the optional louvre is installed on the exterior (ref. Renson)



## Installation

### E-invisitop

- Installation >2500 mm, and not accessible by people: **Fully automated** installation possible\*
- Installation < 2500 mm: **Control button** within line of sight needed\*
- Manual push button/switch operated - wiring diagram: Project solution (with an electrician being involved)\*\*
- Motor conform safety:
  - Opening: 170 mm
  - Speed: 12 mm/s

\*Safety in use IEC 60225-2-10 & risk assessment based on VFF

\*\*Switch button in visual line with element as personal control. Warning info must be provided to user or safety! More details regarding installation instructions checklists and the Technical file for Machinery see "Product info" on article website (060.6770.-)

### Motorised Ventilation Vent

- **Control unit per Ventilation Vent** (max 10 m from vent)
- **Features**
  - Integrated power supply
  - Motor safety control unit
- **Interfaces**
  - Safety gasket for anti-finger trap (Mayser) input
  - D(S)PDT rocket changeover switch (ON-OFF-ON) input
  - MODBUS serial interface
  - 110-230V DC 50-60Hz
  - 24V DC 2.5A motor output