TWINFRESH

ventilation-system.com

VENTS

SINGLE-ROOM VENTILATORS WITH ENERGY RECOVERY

TWINFRESH EASY STANDARD
TWINFRESH EASY COMFORT

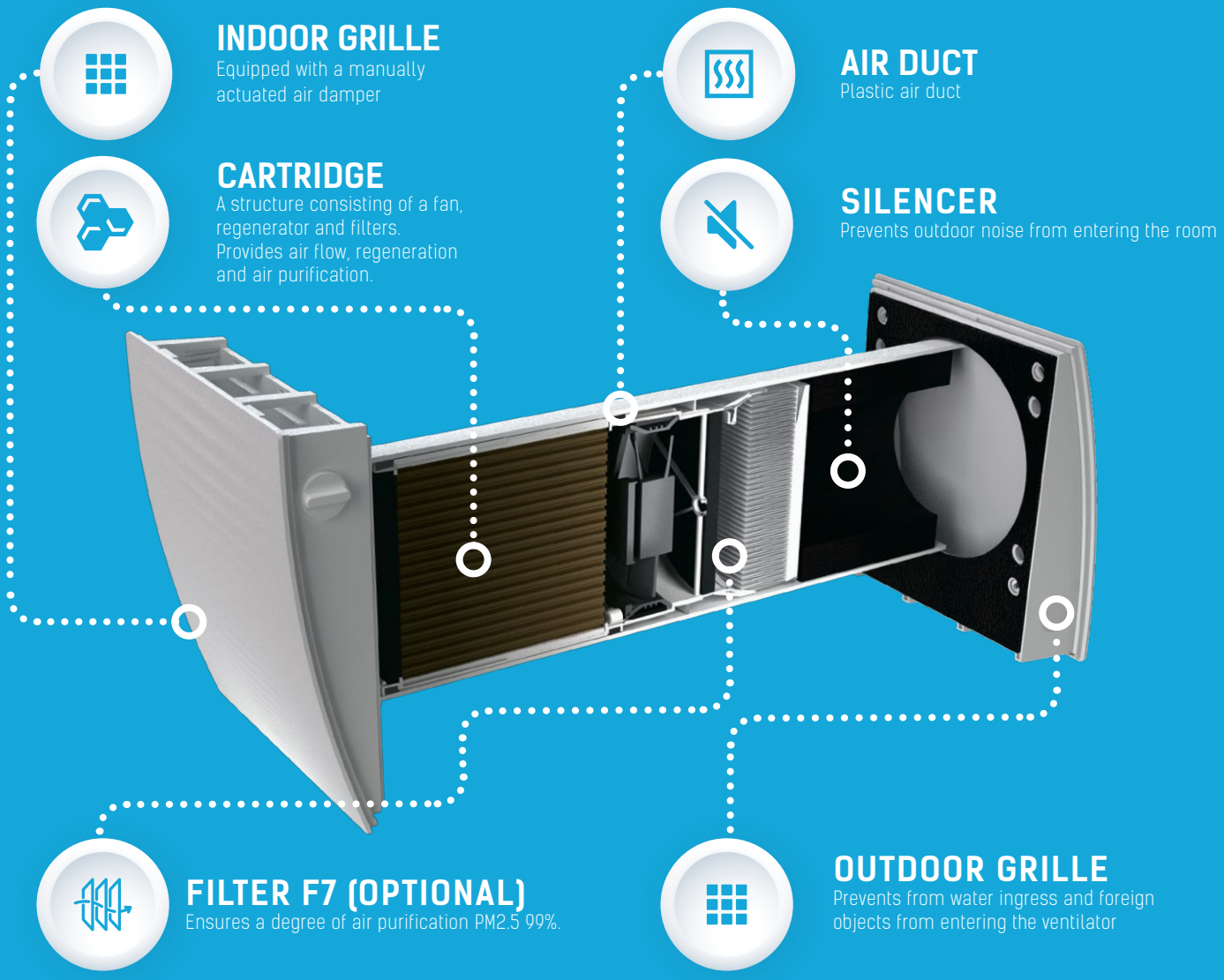
EFFECTIVE, RELIABLE AND ENERGY-SAVING VENTILATORS ENSURE 24/7:

- Fresh air in the room
- Minimum power consumption when operating
- Removal of stale air from the room
- Heat recovery and indoor humidity balance
- Prevention of excessive humidity and mold
- Reduced heating costs in winter and air conditioning costs in summer
- Protection from outdoor noise
- Air purification from dust and insects

APPLICATION

The ventilators are designed to ensure continuous mechanical air exchange in flats, cottages, hotels, cafes and other domestic and public premises. The ventilator is equipped with a regenerator that makes it possible to supply fresh filtered air heated by means of extract air heat energy recovery. The ventilators are designed for through-the-wall mounting and rated for continuous operation. Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

TWINFRESH EASY STANDARD VENTILATOR DESIGN



CERAMIC ENERGY REGENERATOR

A high-tech ceramic energy accumulator is used to utilize the heat energy contained in the exhaust air to heat the supply air.

Due to its cellular structure, the unique regenerator has a large contact area with the air and high thermal conductivity and accumulating properties.The ceramic accumulator is also treated with a special antibacterial mixture, which prevents the growth of bacteria inside the regenerator. Antibacterial properties of the mixture are maintained for 10 years.

AIR FILTERS

Supply and extract air is purified by means of two in-built filters with a total purification level of G3. The filters provide fresh air purification from dust and insects and protect the ventilator elements from soiling.

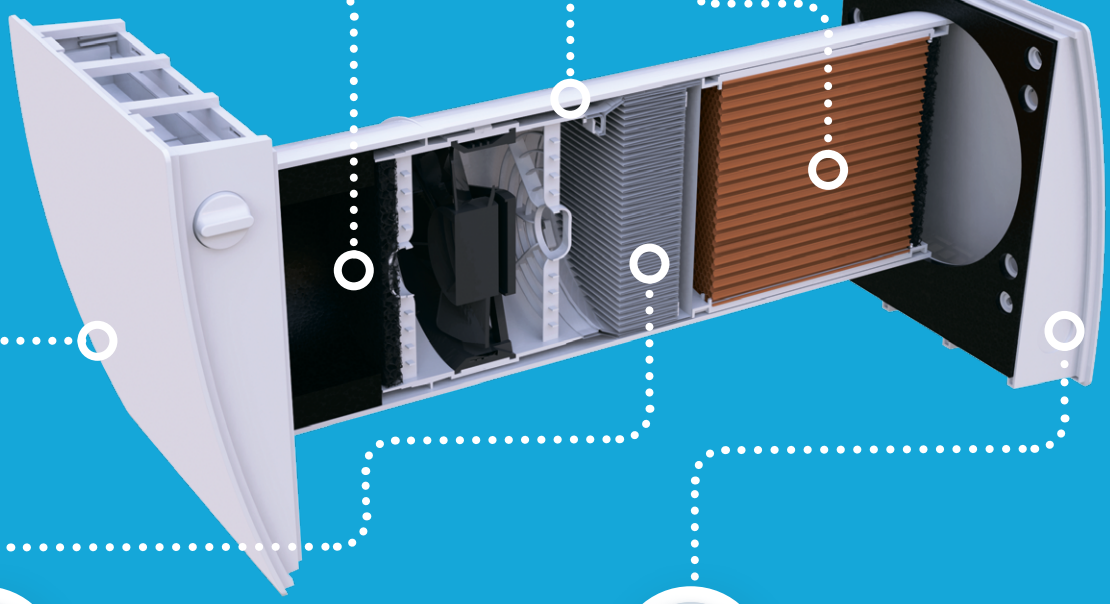
They are treated with the antibacterial mixture as well. To clean the filters, just vaccuum or rinse with water. The antibacterial mixture will not be washed off. An F7 filter is available as an option. It reduces the ventilator's air flow down to 40 m^3/h if installed.

REVERSE DC FAN

An axial reverse fan with a DC motor and 12 V power supply is used to supply and extract air. Due to the sue of DC technology, the fan features low energy consumption.

The fan's motor is equipped with built-in thermal protection against overheating and ball bearings for a long service life.

TWINFRESH EASY COMFORT VENTILATOR DESIGN



INDOOR GRILLE
Equipped with a manually actuated air damper

SILENCER
Prevents outdoor noise from entering the room

AIR DUCT
Plastic air duct

CARTRIDGE
A structure consisting of a fan, regenerator and filters. Provides air flow, regeneration and air purification.

FILTER F7 (OPTIONAL)
Ensures a degree of air purification PM2.5 99%.

OUTDOOR GRILLE
Prevents from water ingress and foreign objects from entering the ventilator

CERAMIC ENERGY REGENERATOR

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AIR FILTERS

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The filters provide fresh air purification from dust and insects and protect the ventilator elements from soiling.
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To clean the filters, just vaccuum or rinse with water.
The antibacterial mixture will not be washed off.
An F7 filter is available as an option. It reduces the ventilator's air flow down to 40 m^3/h if installed.

REVERSE DC FAN

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CONTROL AND OPERATION MODES

The ventilator is controlled via a wall panel.

KV TWINFRESH EASY RL-50
Ventilator wall control panel

A single panel with touchscreen buttons is designed to control a maximum of two units.
Safe low-voltage power supply (12 V) between the control panel and the units:

- Speed – 1,2,3
- Modes: recovery, ventilation
- "Party" timer – 4 hours at maximum speed
- "Night" timer – 8 hours at minimum speed
- Filter maintenance indicator
- Alarm indicator

OPERATION LOGIC OF VENTILATORS

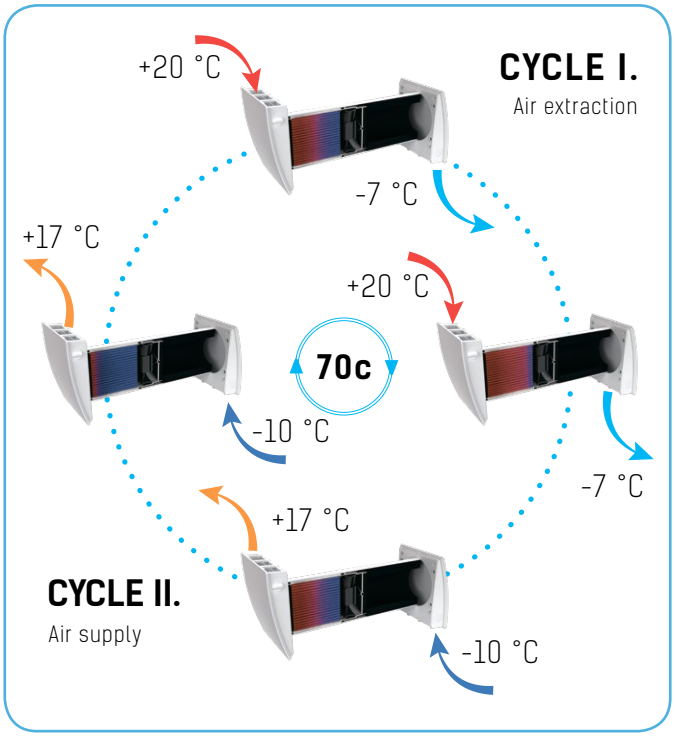
Energy recovery is carried out by means of reverse operation of the ventilator, which includes two cycles:

CYCLE I.

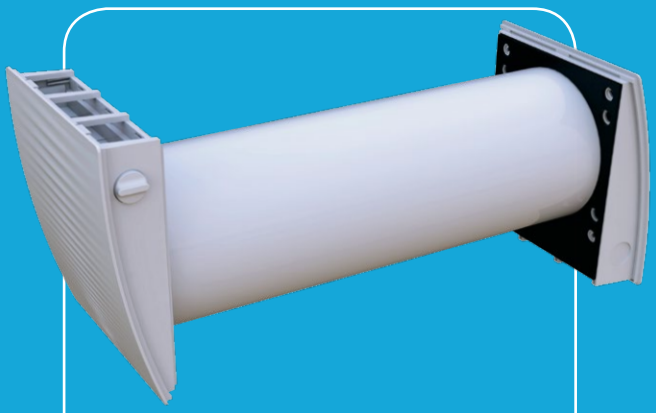
Warm stale air is extracted from the room and, as it flows through the ceramic energy accumulator, it gradually heats and moisturizes the accumulator. In 70 seconds after the ceramic regenerator gets warmed, the ventilator is switched to supply mode

CYCLE II.

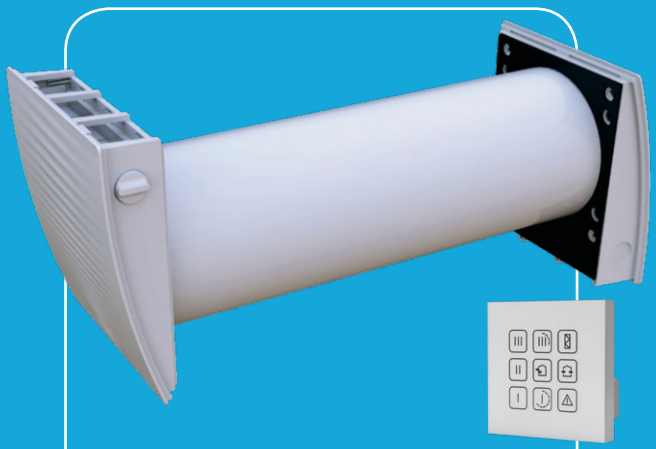
Fresh, but cold intake air from outside flows through the ceramic energy accumulator, absorbs accumulated moisture and is heated up to the room temperature. In 70 seconds after the regenerator gets cooled down, the fan is switched to air extraction mode and the cycle is renewed.Alternating between supply and extract modes happens each 70 seconds.



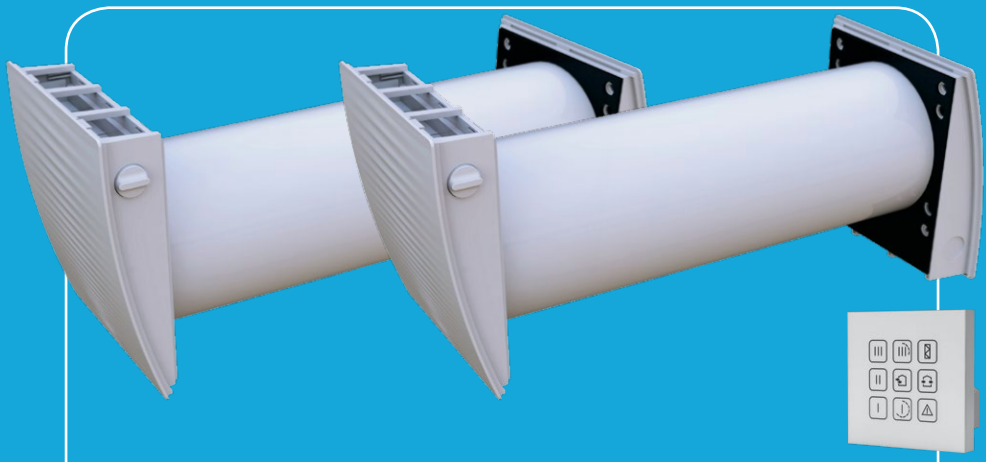
Unit series	Model	Rated air flow [m³/h]	Modification	Control
TwinFresh	**Easy** – a single domestic heat exchanger **Easy-D** – a set of two devices	**_** – 50 m³/h	Standard – a single-block cartridge Comfort – a module-based cartridge	**_** – none **RA** – touch screen wired controller for wall mounting



TwinFresh Easy Standard



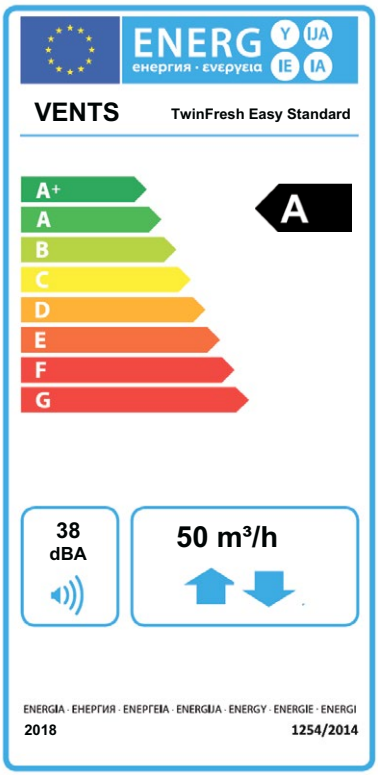
TwinFresh Easy Standard RA



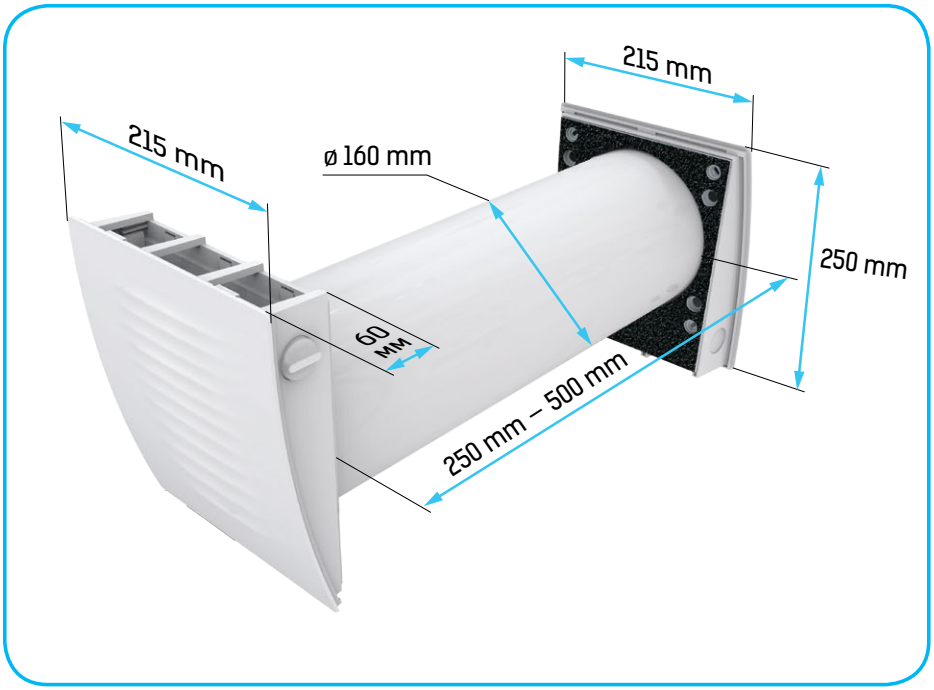
TwinFresh Easy-D Standard RA

TECHNICAL DATA

	TwinFresh Easy Standard			TwinFresh Easy Comfort		
Speed	1	2	3	1	2	3
Voltage [V/Hz]	100-240 / 50-60			100-240 / 50-60		
Power consumption [W]	1,00	2,10	4,30	2,00	3,50	5,50
Total current consumption [A]	0,017	0,025	0,041	0,030	0,030	0,060
Air flow [m³/h] (CFM)	15 (9)	30 (18)	50 (29)	15 (9)	35 (21)	50 (29)
Air flow in recovery mode [m³/h] (CFM)	8 (4)	15 (9)	25 (15)	8 (4)	15 (9)	25 (15)
Power consumption [W/l/s]	0,48	0,50	0,62	0,96	0,84	0,79
RPM [min⁻¹]	915	1555	2330	800	1300	1900
Sound pressure level at 1 m distance [dBA]	21	27	29	10	27	35
Sound pressure level at 3 m distance [dBA]	12	18	20	4	19	26
Outdoor noise reduction [dBA] (Sones)	41 (2,5)			40/44 (3)		
Heat recovery efficiency [%]	≤ 92			≤ 95		
Transported air temperature [°C][°F]	-15...+50 (5...+122)			-15...+50 (5...+122)		
Filter	G3 (F7 optional)			G3 (F7 optional)		
F7 filter's PM2.5 filtering class [%]	99			99		
Air flow when equipped with an F7 filter [m3/h]	40			40		



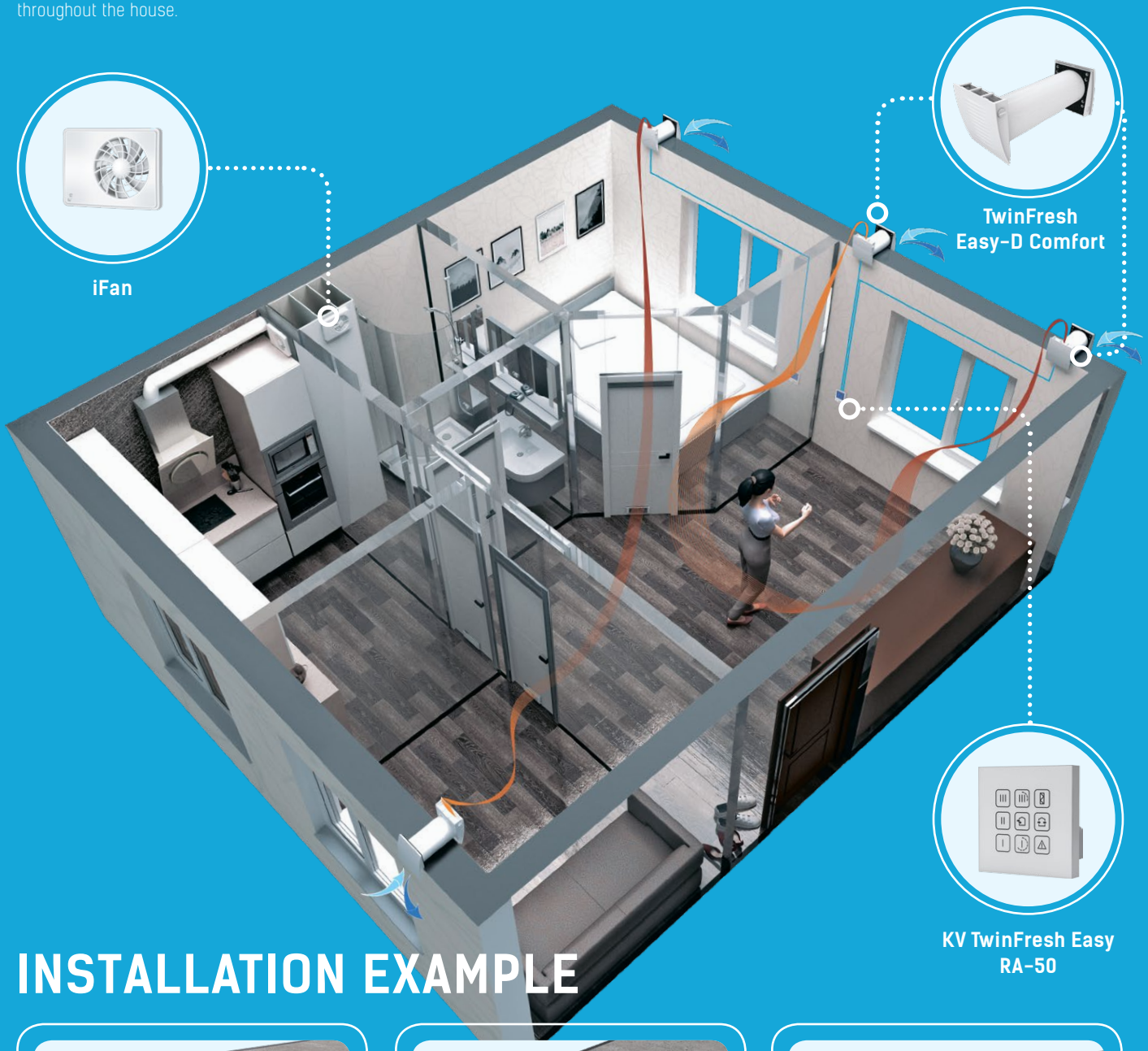
OVERALL DIMENSIONS



VENTILATION SYSTEM ORGANIZATION EXAMPLE

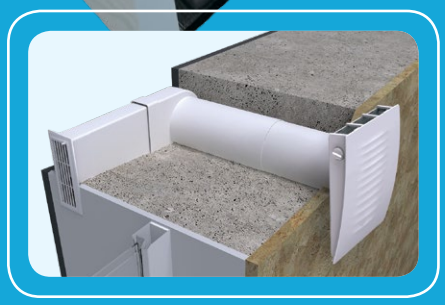
If the ventilation system is installed based on TwinFresh, in each room, one ventilator is installed. It is recommended to install multiple ventilators in large premises. It is recommended to use an even number of ventilators connected to a network to provide balanced ventilation.The setup is carried out in such a way that enables one part of the units to supply fresh air, while the other part extracts stale, contaminated air from the premises outside.TwinFresh can also be used separately, and choose a ventilation mode individually for each room. Air flows between the rooms through doorways and corridors, thus providing appropriate air circulation throughout the house.

Thanks to the energy recovery ventilation system based on TwinFresh ventilators, heating and air conditioning costs are significantly reduced. For the most energy-efficient extraction in the kitchen and toilet, it is recommended to install intelligent VENTS fans iFan WiFi, which provide automatic air extraction after the motion and humidity sensors are triggered.



INSTALLATION EXAMPLE

Mounting through a wall of standard thickness using EH-17 outdoor grille

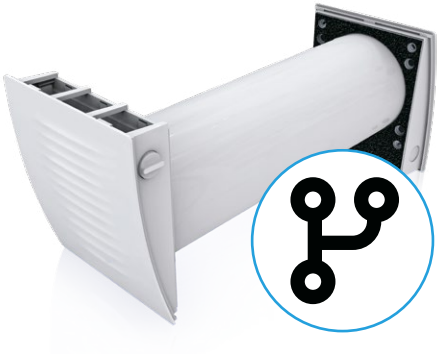


Flush mounting using an NP corner mounting kit

Mounting through a thin wall using an EH-2 hood for thin walls

Group control system for the unit series

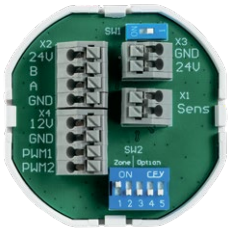
TwinFresh Easy



The group control system for series of wall-mounted heat exchangers is controlled via the **ST1** controller and makes it possible to connect them in a single system using RS485.

The system consists of:

- **ST1 TwinFresh Easy** unit group controller;
- **KV1 TwinFresh Easy** touch screen control panel;
- **KV2 TwinFresh Easy** central touch screen control panel;
- power supply 220 V AC/24 V DC PS 220/24–20.



ST1 TwinFresh Easy

A single network, connected via **RS-485**, can simultaneously maintain up to 16 controllers, up to **4 KV1 TwinFresh Easy** control panels and one **KV2 TwinFresh Easy** control panel.

The **ST1** controller is the core of the system. It controls the power supply, configuration and control of up to 6 ventilators and is compatible with one humidity or CO2 sensor.
The unit group controller is implemented using a wired wall-mounted control panel KV1, and power is supplied using a 220/24 V transformer.

KV2 TwinFresh Easy

The central control panel **KV2** can connect and perform centralized control of up to 4 groups of **ST1** controllers. The **KV2** panel is equipped with a touch screen, a built-in temperature sensor, a weekly timer for each of the 4 controllers, and other user settings.

KV1 TwinFresh Easy

The **KV1** control panel is made of high-quality white plastic. It is equipped with a LED status indicator of the heat exchanger group and is installed in a standard socket.

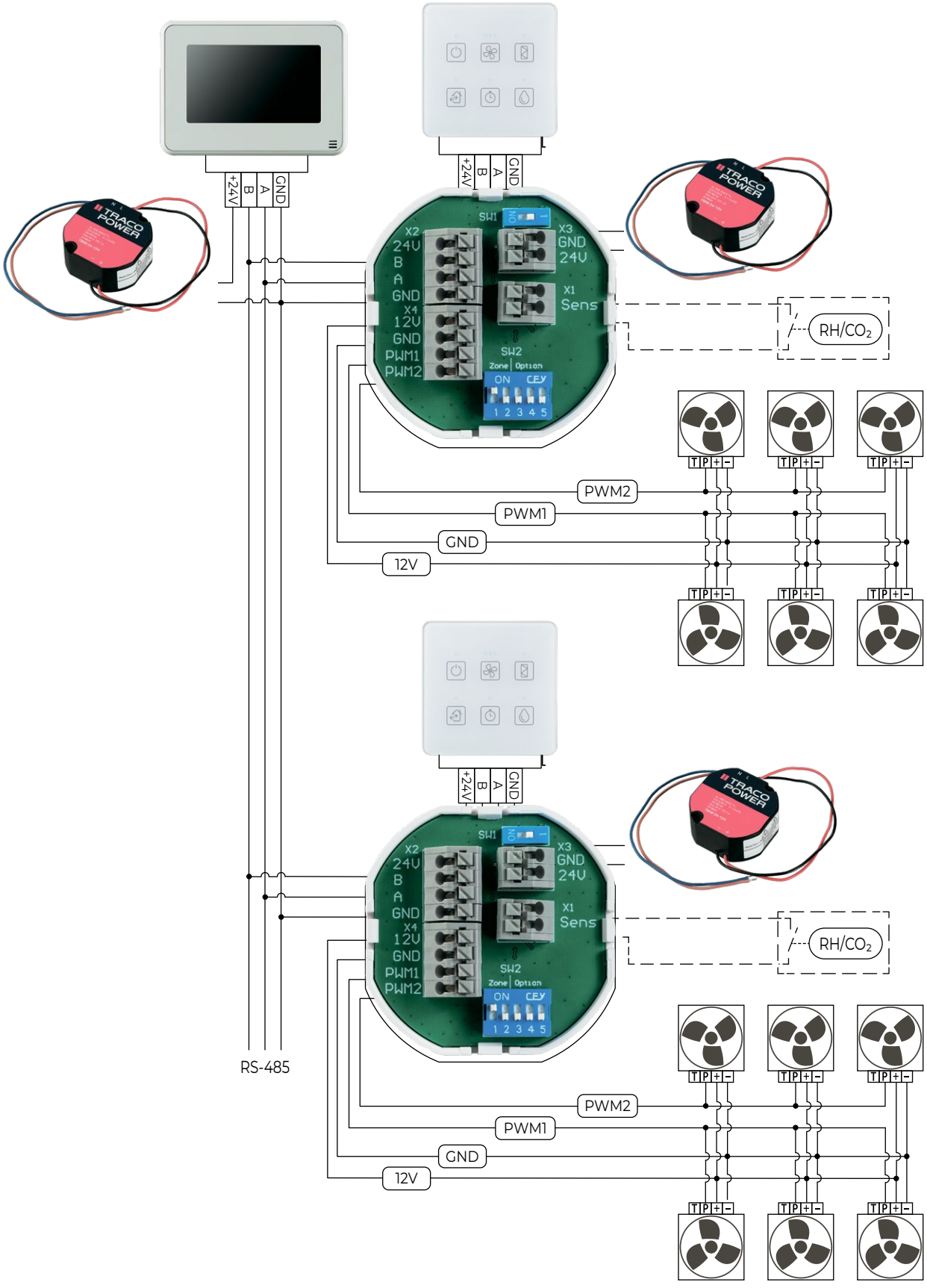
PS 220/24–20

MKV-6. Round mounting box.

MKV-7. Round mounting box with extra space UE 66 for brick walls

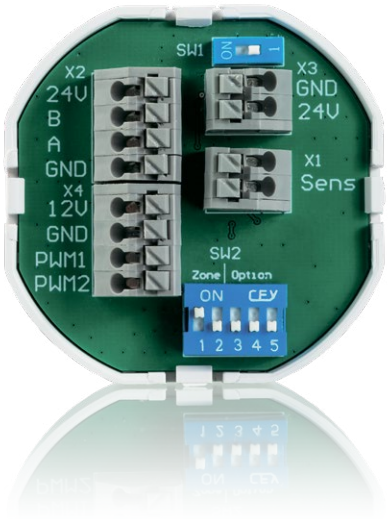
MKV-8. Round mounting box with extra space UE 66-L for brick walls, with membranes

MKV-8. Round mounting box with extra space for hollow walls with membranes


+24V
B
A
GND
SW1
ON
X2
24V
B
A
GND
X4
12V
GND
PWM1
PWM2
X3
GND
24V
X1
Sens
SW2
Zone
Option
ON
CEY
1 2 3 4 5
RH/CO2
PWM2
PWM1
GND
12V
RS-485

TwinFresh Easy unit series group controller

ST1 TwinFresh Easy



Description

Power supply and control of up to 6 TwinFresh Easy devices via an RS-485 wired connection over a distance of up to 20 m

Application

The controller is designed to operate with the following control devices:

- KV1 TwinFresh Easy control panel;
- KV2 TwinFresh Easy central control panel;
- PS Eco 220/24-20 power supply unit.

The controller ST1 TwinFresh Easy makes it possible to:

- select speed settings for an appropriate modification of TwinFresh Easy;
- connect an optional wired (NO) RH, CO2 sensor or others;
- set the addressing of the corresponding zone using the DIP switch.

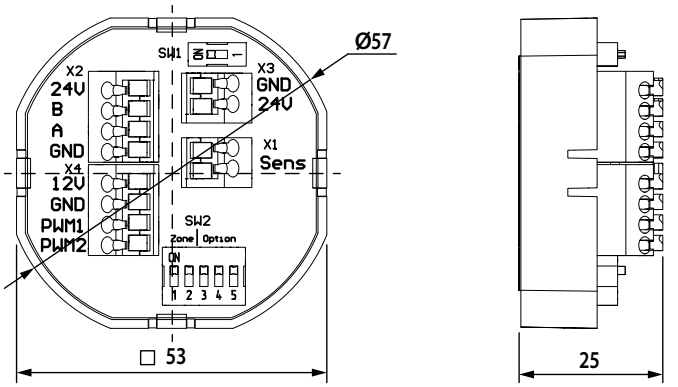
Installation

The controller is installed indoors in standard round electrical installation boxes. The configuration and connection of TwinFresh Easy devices, as well as KV1 and KV2 control panels are carried out according to the ST1 TwinFresh Easy controller's user manual.

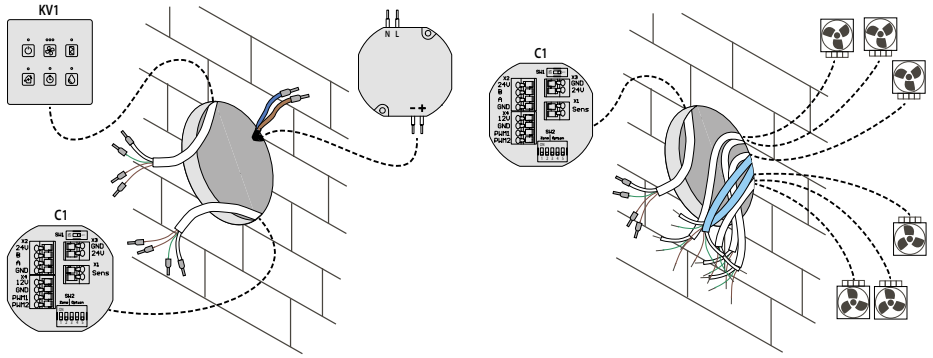
Technical data

	ST1 TwinFresh Easy
Voltage DC [V]	24 ± 10 %
Current per 24 V DC [A]	1,25
Ambient temp. [°C]	+10...+45
Ambient humidity range [%]	10-80 (no cond.)
Weight [kg]	0,06
IP rating	IP20

Overall dimensions [mm]



Installation options



Control panel

KV1 TwinFresh Easy

Application

The wall-mounted touch control panel is designed for use as part of the control system for residential decentralized air handling units of the TwinFresh Easy series.

Design

- The casing is made of high-quality plastic.
- The sensitive touch panel is made of glass and equipped with six control buttons, LED indicators for easy monitoring of the operating mode and a built-in humidity sensor.
- indicator.
- It is designed to work with the S1 controller/

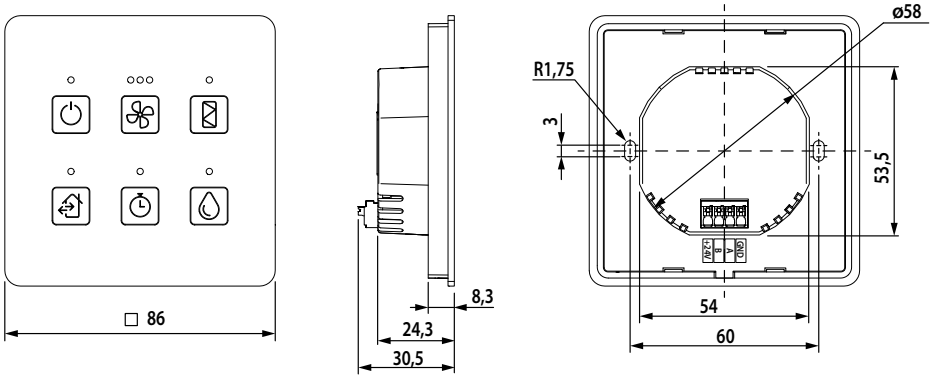
Installation and connection

The control panel is installed indoors on the wall in a flush-mounted box. The control panel is connected according to the product user's manual.

Technical data

	KV1 TwinFresh Easy
Voltage DC [V]	12–32
Current per 24 V DC [A]	0,1
Ambient temp. [°C]	+10...+45
Ambient humidity range [%]	10-80 (no cond.)
Weight [kg]	0,06
IP rating	IP20

Overall dimensions [mm]



Control panel

KV2 TwinFresh Easy

Application

The KV2 central control panel with a touch screen is used to control the TwinFresh Easy series of reversible residential ventilators with energy recovery.

Functions

- Central control of up to 4 groups of TwinFresh Easy devices.
- Up to 6 devices can be connected to each group at the same time.
- 7 languages available (English, German, French, Danish, Polish, Ukrainian, Russian).
- ndividual control of each group of devices.
- Switching speeds is individual for each group of Twin Fresh Easy devices.
- Change of user modes.
- Built-in temperature sensor.
- Weekly scheduled operation is individual for each zone.
- Sleep" timer.
- "Party" timer.
- Current time.
- Controls the indoor air temperature.
- Indication of filter replacement (timer-based).

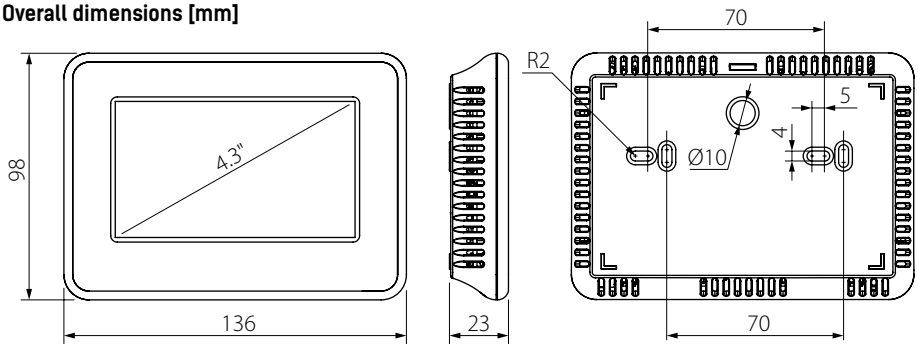
Installation

The control panel is connected and installed according to the product users manual.

Technical data

	KV2 TwinFresh Easy
Overall dimensions [mm]	12–32
Current per 24 V DC [A]	0,1
Power cord type (10 m)	4 x 0,25 mm²
Temperature range [°C]	+10...+45
Humidity range [%]	10-80 (no cond.)
IP rating	IP20

Overall dimensions [mm]



Power supply unit 220 V AC / 24 V DC

PS 220/24–20

Application

PS 220/24-20 is a fully sealed AC/DC power supply designed for residential and industrial use as part of the group control of TwinFresh Easy series devices based on the ST1 controller and KV1 and KV2 control panels.

Design

The transformer is supplied in a compact dust and waterproof casing, protected according to the IP68 standard, and also meets the requirements of IEC/EN 62368-1, IEC/EN 60335-1 and IEC/EN 60601-1 3rd edition and is certified according to 2xMORR.

Installation

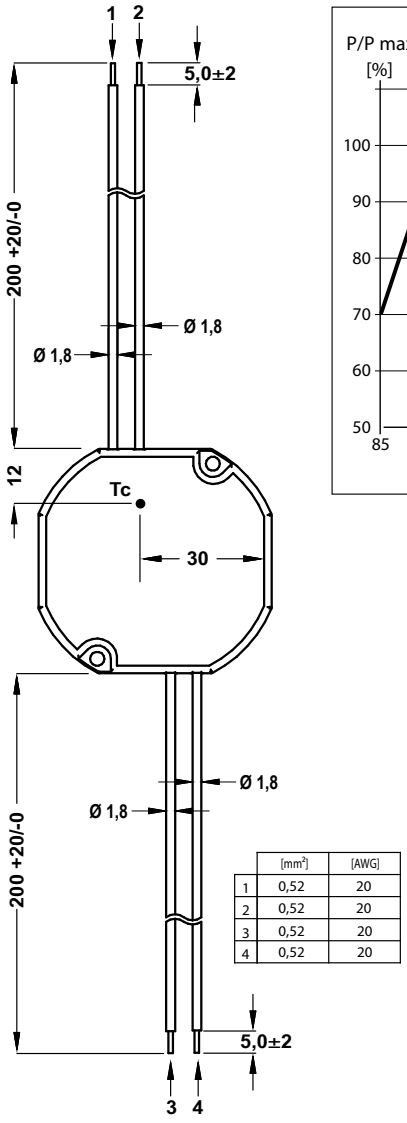
The transformer is installed indoors.
Transformers must be installed outside the area of high humidity and temperature. Flush mounting behind a suspended ceiling or in a niche in the wall is possible.
PS 220/24-20 is a built-in power supply unit. It is mounted in wall sockets.

The wires used for connection are loose. Fire safety requirements must be met during installation and operation. Do not install transformers above heating devices.

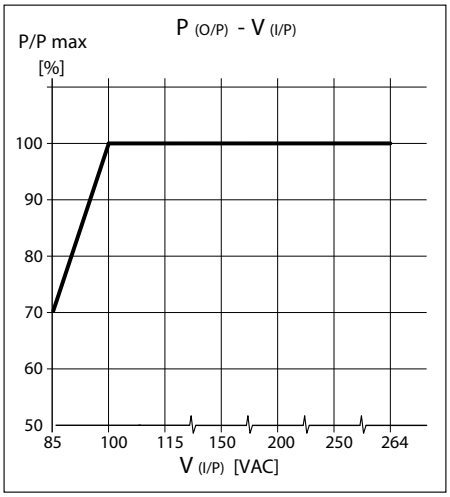
Technical data

	PS 220/24–20
Power [W]	24
Voltage AC [V]	85...264
Rated input current [A]	0,5–0,25
Input frequency [Hz]	47–63
Inrush current 115/230 V AC [A]	25/50
Output voltage DC [V]	24
Output current [A]	1
Circuit breaker rating / Characteristic	6 – 16A / Characteristic B or C
Power factor [λ]	0,47
Output power derating –Temperature	2% / V below 100 VAC
Output power derating –Input voltage	2%/ K above 50 °C
Means of protection	2 x MOPP
Leakage current (max) [µA]	100
Touch current (max) [µA]	100
Network configuration	TN-S, TN-C, TT, IT
No. of outputs	1
Efficiency ratio [%]	89
Maximum casing temperature [°C]	95
Operating temperature [°C]	20...80
Storage temperature [°C]	40...90
Maximum altitude	5000 m / 50-106 kPa
External dimensions [mm]	53 x 51 x 24,5
IP rating	IP68

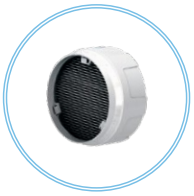
Overall dimensions [mm]



	[mm²]	[AWG]
1	0,52	20
2	0,52	20
3	0,52	20
4	0,52	20



ACCESSORIES



SF TwinFresh Easy P-50 F7
Filter F7 (supplied with a plastic cup)

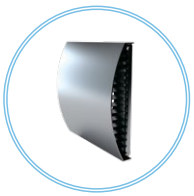
SF TwinFresh Easy P-50 G3
G3 filter set (2 pcs.)

MVMO 150 bV1s An
Round metal grille

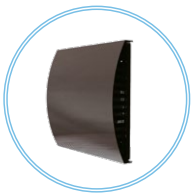
MVM 152 bVsN
Round hood made of stainless steel

MVVM 162 05
Hood for mounting from the inside

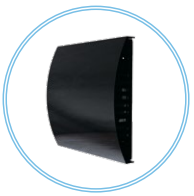
EH-14 white 160
White plastic hood



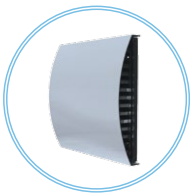
EH-14 chrome 160
Gray plastic hood with brushed stainless steel cover



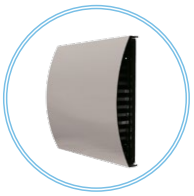
EH-14 brown 160
Brown plastic hood



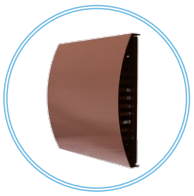
EH-14 black 160
Black plastic hood



EH-14 gray 160
Gray plastic hood

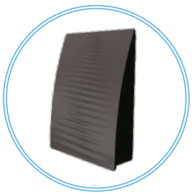


EH-14 beige 160
Beige plastic hood

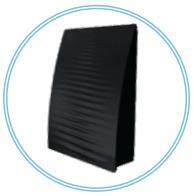


EH-14 terracotta 160
Terracotta plastic hood

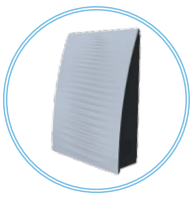
EH-17 white 160
White plastic hood



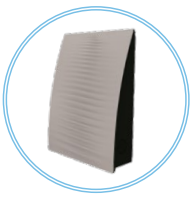
EH-17 brown 160
Brown plastic hood



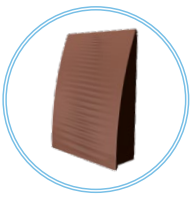
EH-17 black 160
Black plastic hood



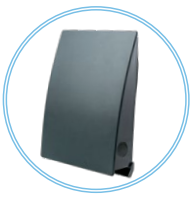
EH-17 gray 160
Gray plastic hood



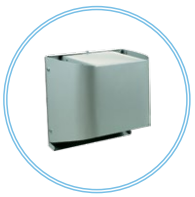
EH-17 gray 160
Gray plastic hood



EH-17 terracotta 160
Terracotta plastic hood

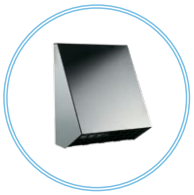


EH-10 anthracite 160
Anthracite plastic hood

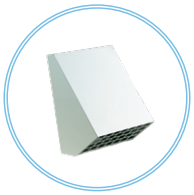


EH-2 gray 160
Hood for thin walls made of stainless steel painted gray

EH-2 chrome 160
Hood for thin walls made of brushed stainless steel



EH-13 chrome 160
Hood for cold climates made of brushed stainless steel



EH-13 white 160
Hood for cold climate made of aluminum, painted white

NP white 160
Corner mounting kit

NP chrome 160
Corner mounting kit

KV TwinFresh Easy RL-50
LCD control panel

MKV-6. Round mounting box

MKV-7. Round mounting box with extra space UE 66 for brick walls

MKV-8. Round mounting box with extra space UE 66-L for brick walls, with membranes

MKV-8. Round mounting box with extra space for hollow walls with membranes

VENTS

TWINFRESH

The information in this catalog is for reference only.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

2025-01