

# reventon

INDUSTRIAL SOLUTIONS

## Technical documentation

### Roof fan STORM series

**MODELS:**

STORM 190 AC

STORM 250 AC

STORM 315 AC

STORM 400 AC

STORM 225 EC

STORM 315 EC

STORM 355 EC



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1. INTRODUCTION

Thank you very much for purchasing roof fan STORM. We would like to congratulate you on excellent choice. Please read and keep this manual.

1.1 PRECAUTIONS

The buyer and the user of the roof fan Reventon Group brand should read carefully the following instructions and proceed to the content recommendations. Proceeding due to the following instruction guarantees the correct usage and safety. In case of any doubts please contact directly Reventon Group sp. z o. o. [Ltd.]. The producer reserves the rights to make changes to the technical documentation without previous notice. Reventon Group sp. z o. o. [Ltd.] is not responsible for the damages which occur due to improper installation, not keeping the device in repair or using the device out of line. The installation should be carried out by the professional installers, who possess the qualifications to install these types of devices. The installers are responsible for making the installation as instructed in the technical data. In case of unserviceable please plug out the device and contact with the authorized for repair person or the supplier. During the installation, use, service and periodical inspections all regulations and safety rules must be followed.

1.2 TRANSPORT

During the acceptance of goods, it is needed to check the device to exclude any damages. During the transport, it is needed to use the proper equipment, it is necessary to carry the device by two people. In case of any damages please fill in the damage report in presence of the supplier.

1.3 PACKAGE CONTENT

- roof fan
- instruction and warranty card
- electrical box

1.4 USE

Roof fans from the STORM series are used to remove from the room exhaust air with a dust content not exceeding  $0.3 \text{ g/m}^3$ . They should not be used in aggressive or highly corrosive environments for steel. They are designed for external use on the roofs of spaces like production and storage halls, logistics centers, workshops, etc. The fans often cooperate with supply devices like e. g. mixing chambers, being part of a complete ventilation system.

2. DEVICE CHARACTERISTICS

2.1 CONSTRUCTION AND PRINCIPLE OF OPERATION

**Roof:** made of galvanized steel. It protects the fan against negative influence of atmospheric conditions.

**Roof fan base:** made of galvanized steel. It enables easy installation of the device to the roof base.

**Grid:** made of galvanized steel wire. It is a structural element of the fan - exhaust fan and protecting roof are fixed to it. Additionally it protects rotor against access by unauthorized persons, animals, leaves and other rubbish.

**Centrifugal AC fan (for STORM AC devices):** made of plastic (STORM 190 AC), galvanized steel (STORM 250 AC) or aluminium (STORM 315 AC and STORM 400 AC). The air is sucked in from the axial direction and extracted radially with specially backward curved rotor blades. The fan has a single-phase AC motor with protection rating IP44 and rated current of 0.25, 0.68, 0.60 or 1.15 A (depending on the model). The rotor has diameter of 190 mm (STORM 190 AC), 250 mm (STORM 250 AC), 315 mm (STORM 315 AC) or 400 mm (STORM 400 AC).

**Radial fan EC (for STORM EC devices):** made of plastic (STORM 225 EC) or aluminium (STORM 315 EC and STORM 355 EC). The air is sucked in from the axial direction and extracted radially with specially backward curved rotor blades. The fan has a single-phase brushless EC motor characterized by high energy efficiency and a wide range of speed control. Its parameters are the following: degree of protection IP44 and rated current of 0.7, 1.07 or 2.8 A (depending on the model). The fan rotor has diameter of 225 mm (STORM 225 EC), 315 mm (STORM 315 EC) or 355 mm (STORM 355 EC).

2.2 DEVICE DIMENSIONS

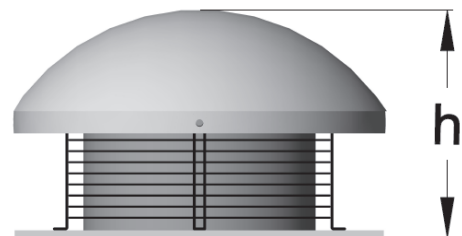
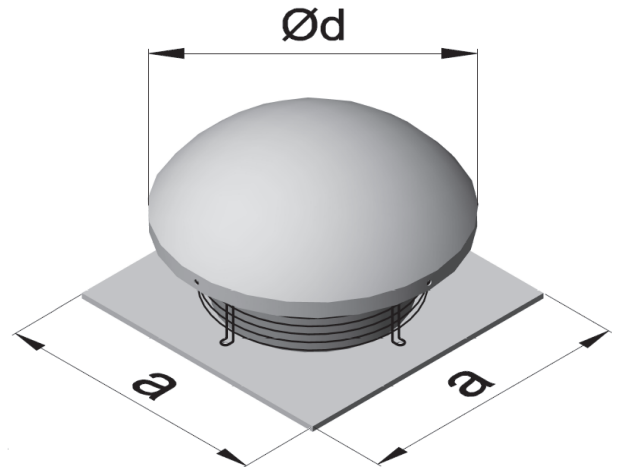
- STORM 190 AC:
  - fan base (a): 503 mm
  - roof (Ød): 390 mm
  - height (h):  $190 \pm 10$  mm

- STORM 250 AC and STORM 225 EC:
  - fan base (a): 503 mm
  - roof (Ød): 390 mm
  - height (h):  $230 \pm 10$  mm

- STORM 315 AC and STORM 315 EC:
  - fan base (a): 503 mm
  - roof (Ød): 500 mm
  - height (h):  $320 \pm 10$  mm

- STORM 400 AC
  - fan base (a): 503 mm
  - roof (Ød): 550 mm
  - height (h):  $330 \pm 10$  mm

- STORM 355 EC:
  - fan base (a): 503 mm
  - roof (Ød): 550 mm
  - height (h):  $360 \pm 10$  mm



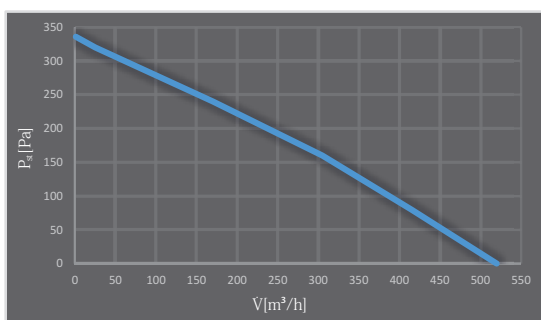
## 2.3 DANE TECHNICZNE URZĄDZENIA

TECHNICAL DATA Product code	STORM 190 AC	STORM 250 AC	STORM 315 AC	STORM 400 AC	STORM 225 EC	STORM 315 EC	STORM 355 EC
	STORM190AC-2017	STORM250AC-1981	STORM315AC-1982	STORM400AC-2018	STORM225EC-1983	STORM315EC-1984	STORM355EC-2019
Maximum airflow [m³/h]	520	1370	1900	3100	950	2250	3600
Supply voltage [V] / Supply frequency [Hz]	230/50	230/50	230/50	230/50	230/50-60	230/50-60	230/50-60
Rated motor current [A]	0.25	0.68	0.60	1.15	0.70	1.07	2.8
Motor speed [rpm]	2340	2380	1400	1340	2200	1850	1950
Motor power [W]	56,5	150	135	252	82	160	345
Protection degree IP [-]	44	44	44	44	44	44	44
Working temperature [°C]	-25 - 60	-25 - 60	-25 - 60	-25 - 60	-25 - 60	-25 - 60	-25 - 60
Net weight [kg]	7.0	8.5	11.5	15.0	8.0	11.5	14.0
Noise [dB]*	55	54	52	56	59	53	64

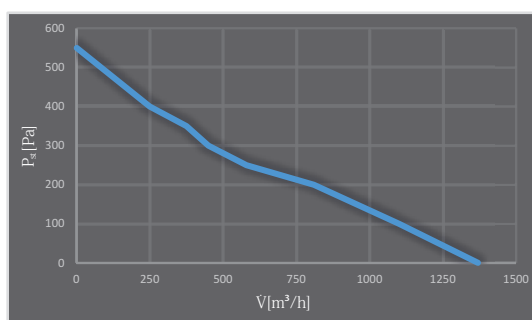
\* measurement at the distance 5 m

## 2.4 PERFORMANCE CURVES

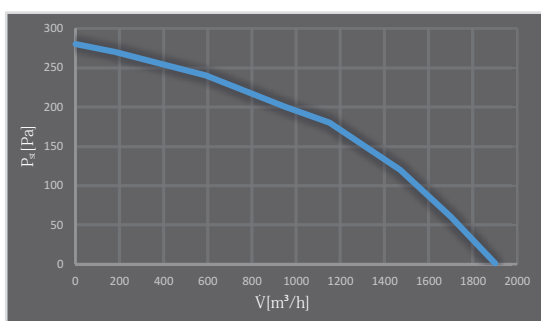
STORM 190 AC



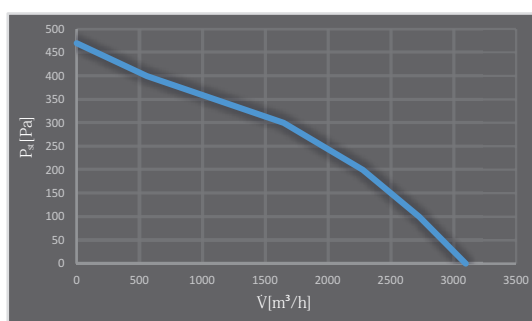
STORM 250 AC



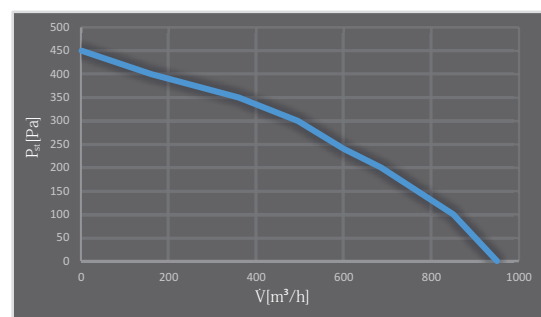
STORM 315 AC



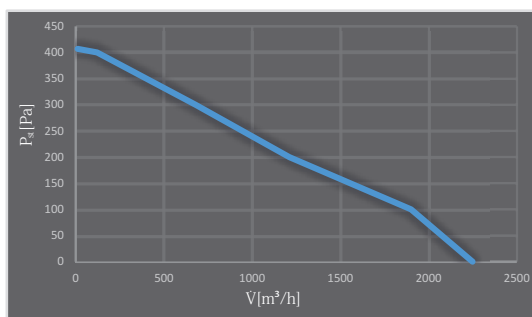
STORM 400 AC



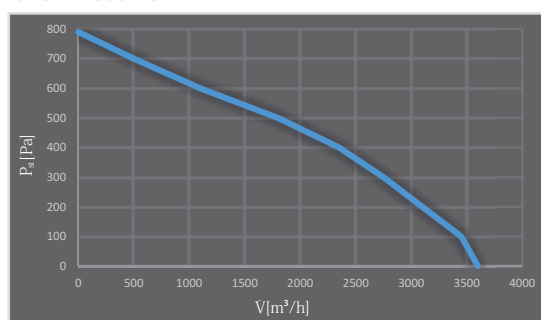
STORM 225 EC



STORM 315 EC



STORM 355 EC



### 3. ASSEMBLY

#### 3.1 GENERAL PRINCIPLES

- the roof fan should be placed in accordance with domestic and local requirements for the installation of roof fans/air exhausts
- it is recommended to install roof fans on the roof bases - dedicated bases for STORM series, which enable easy mounting of the device with four M8 screws, can be found in the Reventon Group offer
- before assembling the roof base and the roof fan, it needs to be verified that the elements to which they will be fixed have sufficient strength
- necessary assembly elements, suitable for this type of installation, should be purchased independently
- the roof fan can be installed as a local ventilation device or a part of a complete ventilation system (i.e. with piping) - in the latter case it is necessary to take into account the airflow of the device due to flow resistance in the pipes / ducts (see performance curves in point 2.4)

### 4. INSTALLATION INSTRUCTIONS

#### 4.1. CONNECTION OF THE DEVICE TO THE ELECTRICAL SYSTEM

- all works concerning electrical installation should be made by the qualified personnel (who possess required authorizations to install electrical equipment), based on wiring schematic diagrams (see point 7)
- before starting up the roof fan with AC motor (STORM AC), verify that the capacitor is connected properly i.e. its cables are connected with black and brown wires coming out of the motor (see wiring diagrams in point 7)
- the electrical installation of the building shall have a residual current device
- it is recommended to check the electric installation and controls before the first start

### 5. PRECAUTIONS & WARNINGS

The precautions mentioned below must be strictly followed during operation of the device:

- all works concerning electrical installation (disassembly, repair etc.) should be made by the qualified staff, who possess the qualifications due to the domestic and local norms, regarding electrical installations
- the fan can not be used for exhausting strong contaminated or aggressive gases
- before service or exchange of the device it is obligatory to cut off the current supply
- do not limit or cover the inlet and outlet of the device
- do not install, service the device with wet hands or barefoot
- the device should be kept out of reach of children and animals
- after operating time of the device, please utilize it concerning the local norms and regulations
- it is recommended to clean the device periodically (at least twice a year):
  - fan casing, blades and grid clean from dirt
- failure to comply with cleaning obligations may have a negative effect on technical parameters of the device and lead to loss of warranty
- if the device is not used for a longer time and lead to loss of warranty disconnect the voltage supply

### 6. CONTROLS

Usage of automatic control dedicated to the devices of Reventon Group gives great possibilities of adjusting the efficiency of the roof fan. We can offer the following:

- for STORMAC

#### Fanspeed controller HC

designed to change the single-phase fan's speed voltage controlled in industrial supply and heating systems. It is available in several versions. The selection of the appropriate model depends on the number of the devices that have to be connected to the one regulator - the total intensity of the connected devices cannot exceed the maximum current flow of the regulator.

- for STORMEC

#### Potentiometer EC

enables to control EC motors by 0-10 V control signal. A convenient knob is used for this, allowing in practice to adjust the fan efficiency in the range of 0-100%. The potentiometer also has an additional switching contact which cuts off the voltage from the fans when there is no need to work.



Output signal: 0 - 10 V  
 Power supply: 10 - 12 V DC / 1mA  
 Impedance: 10 kΩ +- 20%  
 Maximum load of the switching contact:  
 3 A / 230 V AC or 3 A / 12 V DC  
 Weight: 0.35 kg  
 Degree of protection: IP 54

COOPERATION OF CONTROLLERS WITH EQUIPEMENT						
Model	HC 1.2 A	HC 3 A	HC 5 A	HC 7 A	HC 14 A	Potencjometr EC
STORM 190 AC	4	12	20	28	56	-
STORM 250 AC	1	4	7	10	20	-
STORM 315 AC	2	5	8	11	23	-
STORM 400 AC	1	2	4	6	12	-
STORM 225 EC	-	-	-	-	-	1
STORM 315 EC	-	-	-	-	-	1
STORM 355 EC	-	-	-	-	-	1

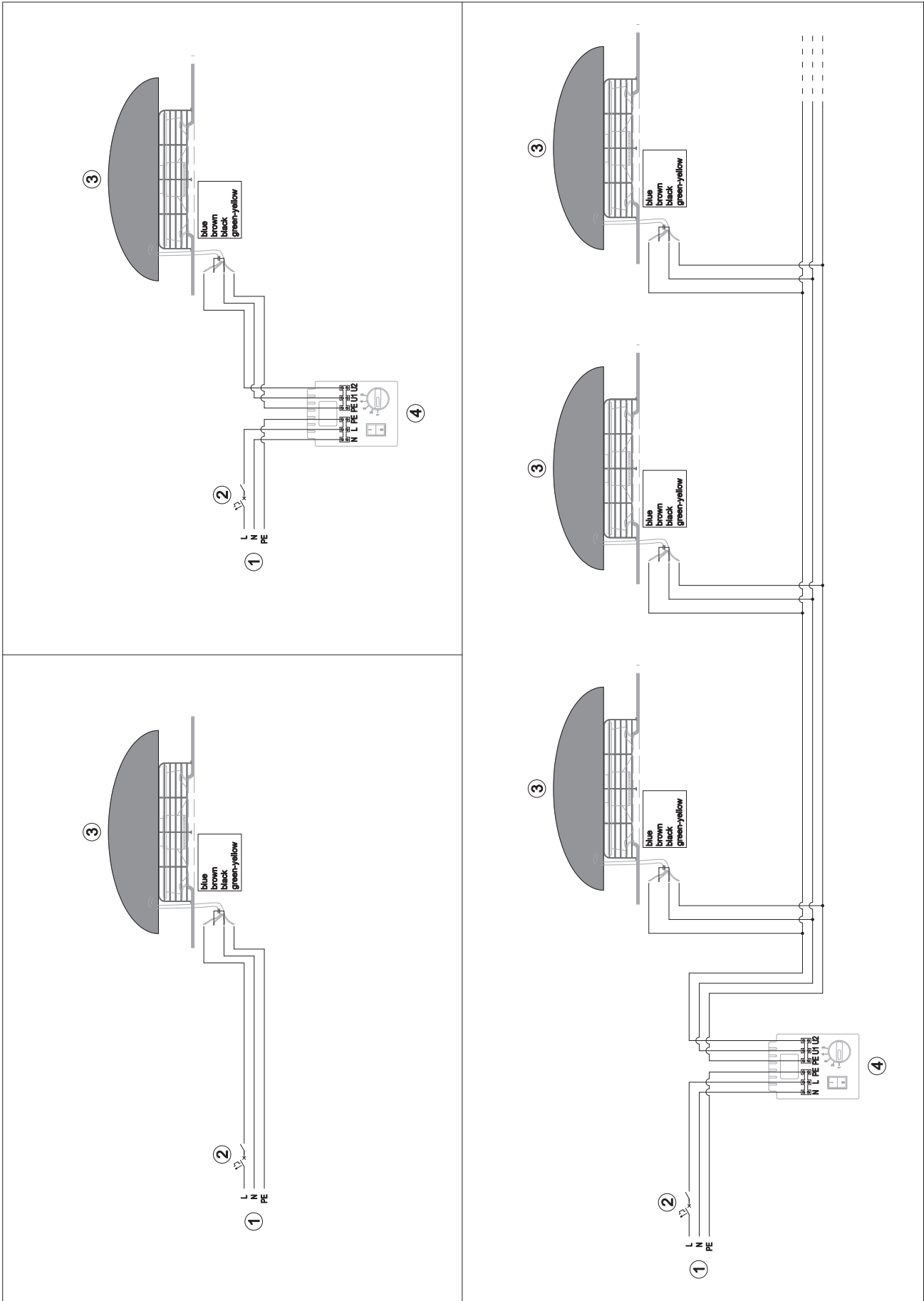


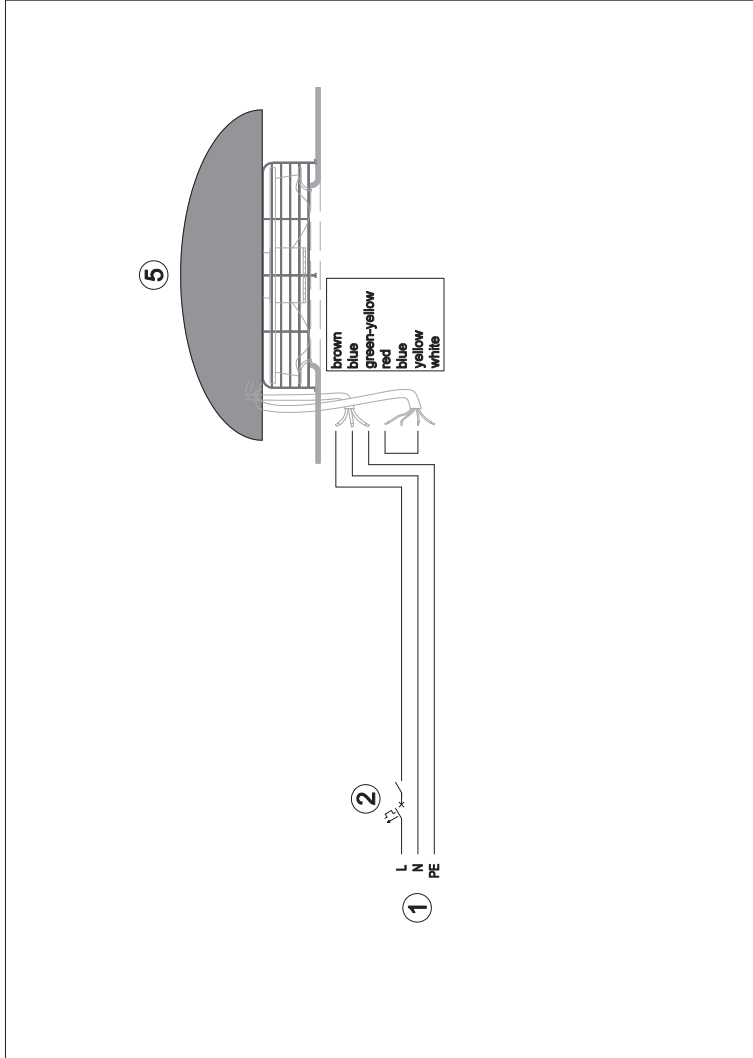
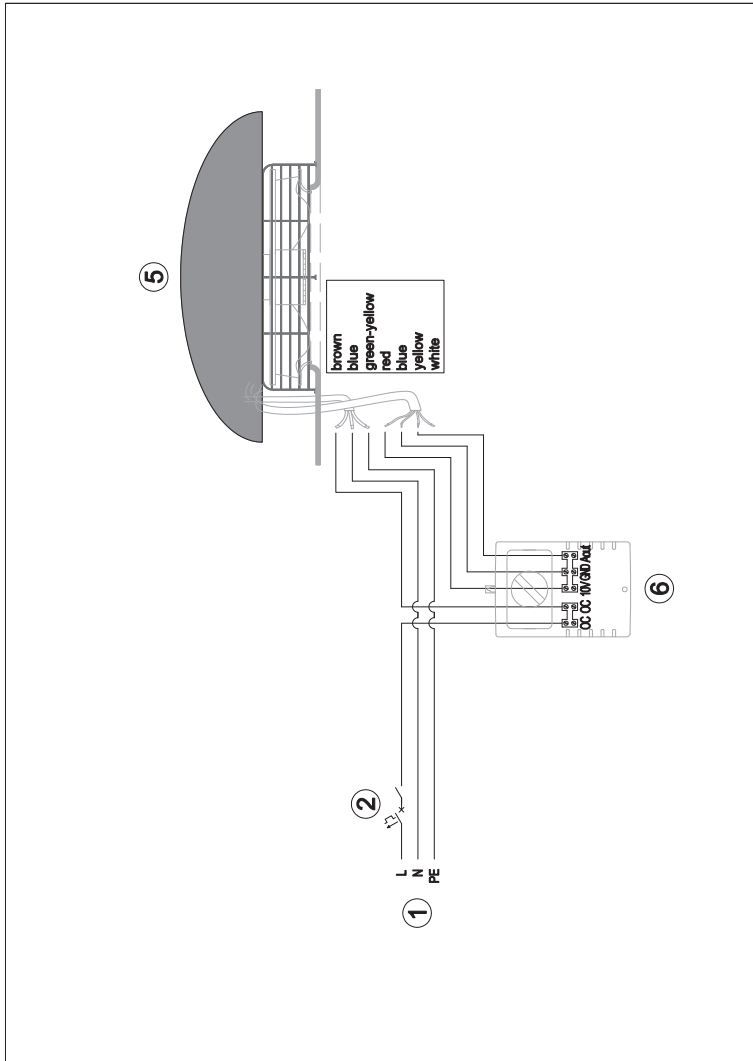
5 control levels: 80-105-135-170-230 V  
 Voltage/Frequency: 230 V AC / 50 - 60 Hz  
 Maximum current output (depending on model):  
 1.2 A, 3 A, 5 A, 7 A, 14 A  
 Protection: thermal switch  
 Weight (depending on model):  
 1.45 kg, 2.5 kg, 4.5 kg, 5.5 kg or 10.5 kg  
 Degree of protection: IP 54

## 7. CONNECTION SCHEMES

1. Power
2. Main switch, overcurrent circuit breaker\*
3. Roof fan STORM AC
4. Fan speed controller HC
5. Roof fan STORM EC
6. Potentiometer EC

\*main switch and safety fuses are not included in the set





## 8. TERMS OF WARRANTY

I. Producer Reventon Group Sp. z o.o. [Ltd.] grants the buyer a 24-month warranty period for the following devices:

- roof fan STORM 190 AC
- roof fan STORM 250 AC
- roof fan STORM 315 AC
- roof fan STORM 400 AC
- roof fan STORM 225 EC
- roof fan STORM 315 EC
- roof fan STORM 355 EC

II. The terms of warranty are valid from purchasing the device (i.e. invoice / another confirming document issue date) but not longer than 30 months from leaving the producer's warehouse.

III. To obtain the service it is needed to provide or send to the producer scans of the warranty card with stamp of installation company, document confirming the purchase (eg. like copy of the invoice) and correctly filled the warranty form.

IV. The producer is committed to consider the claim within 14 working days since the date of reporting (i. e. day when documents given in point III are provided).

V. In the exceptional cases, the producer reserves the right to extend the time limit for examination of warranty, especially if the defect is not permanent and its determination requires a longer period of time. The extension must be notified by the producer before the end of the 14th working day.

VI. Under the guarantee the producer provides a repairment, replacement or refund for the defective device within a specified time limit.

VII. Warranty does not cover the parts of the device subject to normal maintenance and the following cases:

a) mechanical damage of the product

b) defects and damages through:

- improper storage or transport
- improper or non-compliant use and maintenance (i. e. inconsistent with the manual)
- using the device in the improper conditions (too high humidity, too high or too low temperature, impact of the surrounding, sun etc.)
- unauthorized (by the user or other unauthorized persons) repairs, modifications or construction changes
- connecting equipment inconsistent with the technical documentation
- connecting additional equipment, which is not recommended by the producer
- improper power supply

c) elements which wear and tear such as discolor of the housing

If there is any of the above, claimant will be charged for transport and / or repairs.

VIII. Any changes in the Warranty Terms, improper use of the product (careless handling, exposure to liquids, moisture, corrosion), as well as traces of selfrepairing (non by the Reventon Group) or alterations cause, the warranty is not valid.

IX. Not following to any of warranty regulations makes the warranty not valid.

X. All correspondence, returns, complains should be send to the following address: Reventon Group Sp. z o.o. [Ltd.], 556 Wyzwolenia Street, 43-340 Kozy, Poland or email address: [serwis@reventongroup.eu](mailto:serwis@reventongroup.eu).

**The producer reserves the rights to make changes to the technical documentation without previous notice.**

## Warranty card

Factory number of the device:	Address and place of assembly
Stamp and signature of the installation company:	

## Warranty form

The company reporting the complaint:	Date of assembly:	Address and place of assembly the device:
The company installing the device:	Date and circumstances of noticing the defect:	
	Factory number of the device:	Date of declaration the complaint:
Description of the defect:		
Contact Name and Surname, telephone number/ e-mail address:		

## Service card

Date of declaration the complaint:	Description of the repair:	Service stamp:
Date of repair:		





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