



reventon
INDUSTRIAL SOLUTIONS

Technical documentation
Destratification fan HC-3S



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1. INTRODUCTION

Thank you very much for purchasing destratification fan HC-3S. 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 destratification 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

- destratification fan
- instruction and warranty card

1.4 USE

In the heated high large-spaces the air mass is located in the upper part of room, which causes the heat loss. Destratification fans also called the drop fans or air mixers are used to save on heating. They steer the air back to work zone at the same time they level out the air temperature in the high room, they also limit the heat loss through the roof. They are used in production halls, warehouses and logistic centres.

2. DEVICE CHARACTERISTICS

2.1 CONSTRUCTION AND PRINCIPLE OF OPERATION

Casing: made of expanded polypropylene (EPP). This material is characterized by low density (light weighted) and high chemical and physical resistance. It has an excellent sound and thermal insulation properties. Moreover, material is environmentally friendly and "green", i.e. 100% recyclable.

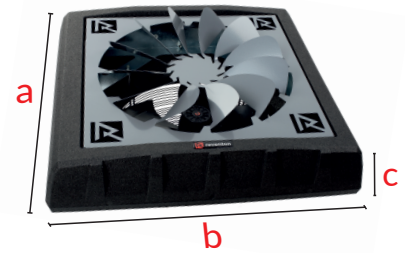
Diffuser 360°: made of galvanized steel. Using specially shaped air stators the diffuser enables even air distribution in the room.

Axial blowing fan: made of galvanized steel. The objective of the fan is to ensure air flow through the exchanger. It has a single-phase, three speed motor with the following parameters: protection degree IP54, rate current 0.7A-1.08 A (depending on operating mode). Fan has diameter 450 mm.

Rotating mounting bracket (optional equipment): enables the device to be installed in several configurations (depending on the requirements) and the unit to be rotated in a horizontal plane.

2.2 DEVICE DIMENSIONS

- a) height (A): 698 mm
- b) width (B): 739 mm
- c) depth (C): 360 mm



2.3 DEVICE TECHNICAL DATA

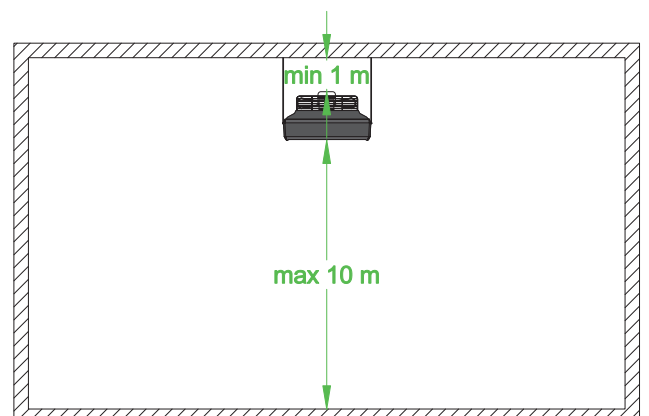
TECHNICAL DATA Product code		Destratification fan HC-3S DHC-3S-1766
Maximum airflow [m³/h]	III STAGE	4600
	II STAGE	3900
	I STAGE	3100
Maximum vertical range [m]	III STAGE	10
	II STAGE	8
	I STAGE	6
Supply voltage [V] / Supply frequency [Hz]		230/50
Rated motor current [A]	III STAGE	1.08
	II STAGE	0.86
	I STAGE	0.70
Motor speed [rpm]	III STAGE	1360
	II STAGE	1050
	I STAGE	750
Motor power [W]	III STAGE	240
	II STAGE	190
	I STAGE	160
Protection degree IP [-]		54
Net weight [kg]		11.5
Noise [dB]*	III STAGE	61
	II STAGE	56
	I STAGE	52

* measurement at the distance 5 m

3. ASSEMBLY

3.1. GENERAL PRINCIPLES

During installation, ensure a free air flow to the device and do not restrict the air stream supply. The figures below show the recommended distances between the heater and building partitions:



3.2. ROTATING MOUNTING BRACKET

The device can be assembled using a rotating mounting bracket. It enables easy installation of the de-stratification fan on the ceiling.

4. INSTALLATION INSTRUCTIONS

The connection of the heater to the hydraulic electrical installations as well as all repairs and disassembly works, must be performed by qualified persons i. e. having the appropriate qualifications for these works. It is the responsibility of the installer to make the installation according to the guidelines from this instruction and in accordance with the local regulations in force.

After connecting to the electric installations, the installer is obliged to make an entry in the Warranty Card, confirmed by a stamp and signature. It is also treated as a guarantee, that the installation was made in accordance with the requirements of this point 4. The Warranty Card is included in this manual under the Warranty Terms in point 8.

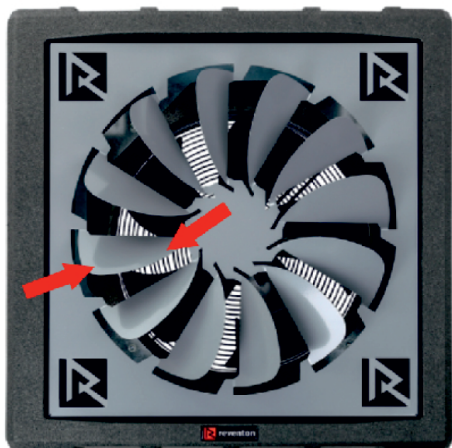
4.1. CONNECTION OF THE DEVICE TO THE ELECTRICAL SYSTEM

- 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 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
- 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):
 - air stators, fan casing and blades 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
- the device is transported with the closed air stators. It is essential to open them in at least for 30% before first start:
 - opening the air stators of the diffuser 360° must be done by two hands in parallel



6. CONTROLS

Usage of automatic control dedicated to the devices of Reventon Group gives great possibilities of adjusting the efficiency of the unit in different, depending on needs, degree of its operation automation. We can offer the following:

3-stage speed controller with thermostat HC-3S

is used to regulate devices equipped with 3-stage fans. It has a 3-stage speed control and built-in thermostat turn on/off the device of automatically when the preset temperature is reached.



Voltage/ Frequency: 230 V AC / 50 - 60 Hz
Maximum current output: 3 A
Temperature range: 10°C - 30°C
Operating mode: continuous or thermostatic
Control accuracy: $\pm 1^\circ\text{C}$
Dimensions: 130 x 85 x 40 mm
Weight: 210 g
Degree of casing's protection: IP 30

Programmable controller HMI

is used to regulate devices equipped with 3-stage fans. It is an advanced controller with many functions i. a. operation in heating, cooling or mixed mode, programmable mode, valve control, automatic selection of the fan speed. Together with the controller an external sensor is provided, which allows to read the temperature in the required place, even remote from the controller. In addition, the device can be integrated with the BMS building control system (using the MODBUS communication protocol).

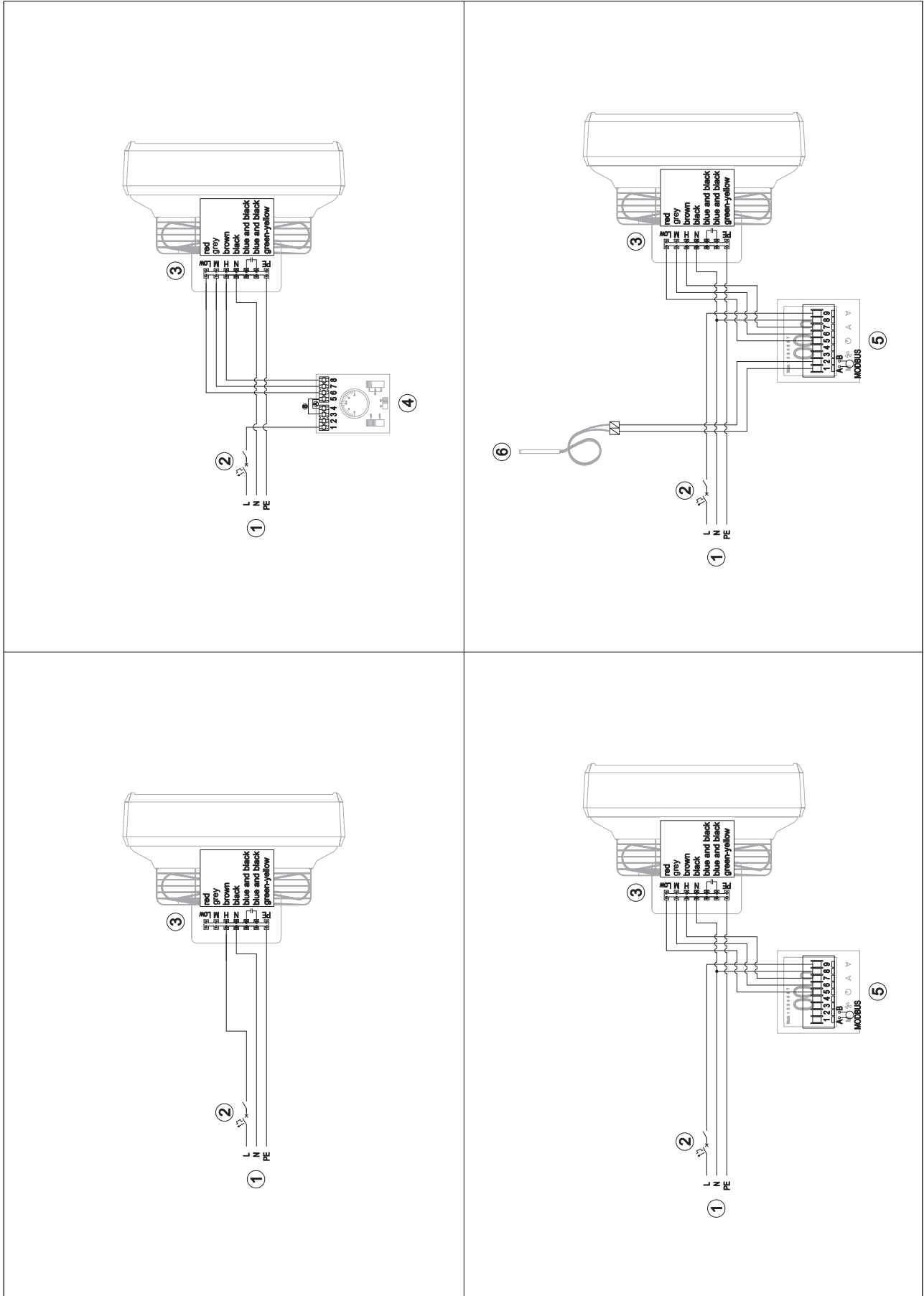


Voltage/ Frequency: 230 V AC / 50 - 60 Hz
Maximum current: 5 A
Operating temperature range: 0 - 45°C
Regulation range: 5°C - 35°C
Regulation accuracy: $\pm 0.5^\circ\text{C}$
External temperature sensor: NTC 10K
Communication: RS485
Dimensions: 86 x 86 x 13.3 mm
Weight: 270 g
Degree of protection (housing): IP 20
Degree of protection (external sensor): IP 68

7. CONNECTION SCHEMES

1. Power
2. Main switch, overcurrent circuit breaker*
3. Destratification fan HC-3S
4. 3-stage speed controllers with thermostat
 - A-work in continuous mode
 - B-operation in thermostatic mode
5. Programmable controller HMI
6. External temperature sensor

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



8. WARRANTY TERMS

I. The producer Reventon Group Sp. z o. o. [Ltd.] provides to the owner 24-month warranty protection period for the following devices:

-destratification fan HC-3S

II. The warranty protection is valid from the purchasing date (i.e. the issue date of invoice) but not longer than 30 months from leaving the producer's warehouse.

III. The complaint should be sent by the complaint form on the website (<https://reventongroup.eu/reklamacje/>). The scan or the photo of the fulfilled warranty card (the card is not required in case of accessories) and the purchase invoice must be attached to the form. The Warranty Card is not required in case of accessories.

IV. The producer is committed to consider the claim within 14 working days since the date of reporting (i. e. the day of receipt of the correctly fulfilled warranty form).

V. In exceptional cases, the producer reserves the right to extend the time for consideration of the request, especially if the defect is not permanent one and its determination requires a deeper analysis. The extension must be notified by the producer before the end of the 14th working day.

VI. Under the guarantee protection, the producer provides a repairment, replacement (the device or its component) or refund for the defective item within a specified time.

VII. In the case of replacement of a device component, the warranty protection of the whole unit is not prolonged.

VIII. The producer does not cover the costs of disassembly and eventual reassembly of the complaint device.

IX. The producer may decide to bring the defective device or its component to the Reventon's service. In such case the transport of the item is organised and paid by the producer. The responsibility of the device's owner is to prepare the item for the shipment - the device must be packed in a way which protects it against transport damages and the dimensions and weight of the package must not exceed 660 x 650 x 400 mm and 30 kg respectively. In the case of elements which cannot be packed in this way, the method of shipment must be agreed and approved by Reventon Group Sp. z o. o. [Ltd.]. In the case of sending a nonstandard package without agreement of the producer, the producer reserves the right to charge the owner of device with all additional transport costs.

X. In the case of arrival of the authorized service of the producer or an installer to fix the complaint item, the customer must ensure them seamless access to the device and all required media like electricity, water, lighting etc. free of charge.

XI. The warranty protection does not cover the parts of the device subject to the normal usage 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 (i. e. 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 discolour of the housing

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

XII. During collection of the device, the item must be checked exactly by the receiver to exclude transport damages. If any of them is observed, the damage report in presence of the supplier have to be filled - such report is the basement for transport complaint. The damage report must be provide by the carrier.

XIII. The producer does not take the responsibility for potential losses and damages related to the downtime of the device during its failure and the complaint considering.

XIV. Any changes in the Warranty Terms, improper use of the product as well as traces of self repairing (beyond the Reventon's service) or alterations cause, the warranty become invalid.

XV. These producer's Warranty Terms do not exclude or limit any rights arising from the pledge.

XVI. Not following to any of the warranty regulations makes the protection invalid.

XVII. All correspondence 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.

Warranty Card

Serial no of the device (applying only to the air water heaters)	Address and place of assembly
Date of connection	Stamp and signature of installer
Hydraulic installation	
Electrical installation	



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