

Humidity, mould and mustiness in cellars are a thing of the past.

# AKE – The fully automatic cellar dehumidification system



The humidity protection  
for cellars!

For fans with  
high nominal power

Dehumidification in conjunction  
with powerful fans

**AKE | AKE 100 | AKE 150**

# Optimum control thanks to constant comparison

The automatic cellar dehumidification system from MAICO ensures demand-driven dehumidification of cellars and extracts the air fully automatically and reliably. Humid basement air is only automatically extracted if the fresh outside air supply is drier. This prevents the formation of condensation on the cold cellar walls even when the outside air humidity is high and ensures drying.

**With intelligent cellar air extraction from MAICO, you get innovative building technology that protects the building fabric for a long time to come.**

**MAICO offers two different systems for automatic cellar dehumidification.**

**System 1:** The **AKE control system** can be used to combine a wide variety of fans, e.g. duct, channel or wall fans, and ventilate or extract the air from large or multiple rooms fully automatically.

**System 2:** The **AKE 100 and AKE 150** are stand-alone ventilation systems with an integrated fan and are perfect for independent dehumidification of cellars and utility rooms up to a maximum of 70 m<sup>2</sup>.



## System 1: The AKE control system for new buildings and redevelopments

MAICO's AKE control system in combination with duct, channel or wall fans extracts air fully automatically and ensures dehumidification as required. Humid air is only extracted if the fresh outside air supply is drier.

## AKE application areas

- Cellars in residential buildings
- Cellar rooms below ground level
- Warehouses
- Garages, underground car parks
- Utility rooms
- Laundry rooms in residential buildings



### Exhaust air side

### Supply air side



Flush-mounted wall fan  
E.g. **EZQ**



Centrifugal duct fan  
E.g. **ERR**



Channel fan  
E.g. **DPK EC**

### Control system



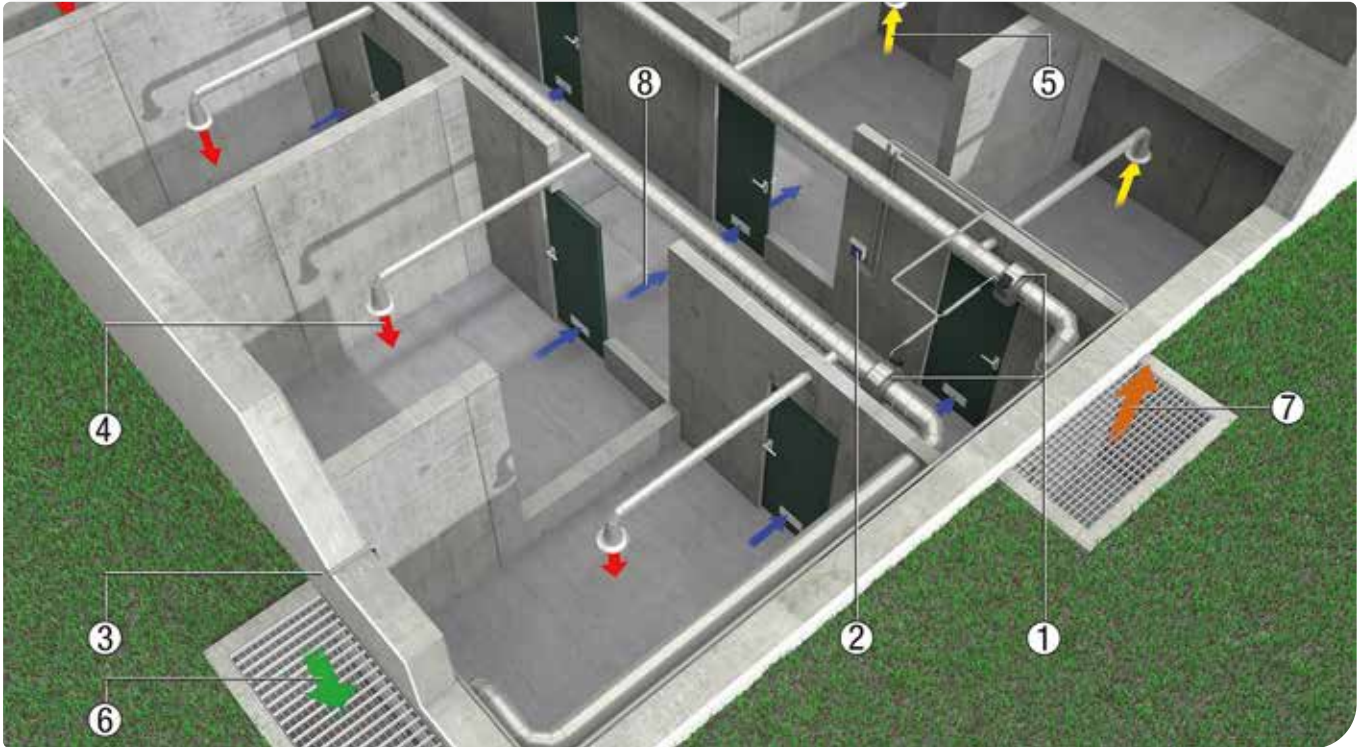
**AKE**  
with external and internal sensor



Fresh air supply via **external grille** or **additional supply air fans**

# The right fan for every type of installation

## AKE application example in cellar rooms below ground level



The AKE system can be used to control a wide variety of fan types. Even an existing ventilation system can be converted into an automatic cellar dehumidification system with all its advantages.

Cellar dehumidification with the AKE control system and an integrated humidity sensor on the inside, as well as a humidity sensor on the exterior wall

- ① Supply and exhaust air fans (e.g. the ERR centrifugal duct fan)
- ② Automatic AKE cellar dehumidification control system
- ③ External humidity sensor
- ④ Supply air
- ⑤ Exhaust air
- ⑥ Outside air
- ⑦ Outgoing air
- ⑧ Overflow air

### Mode of operation and technical details

- Internal and external humidity and temperature sensors
- Conversion of the measured relative humidity into absolute humidity
- Constant comparison of the absolute humidity between the indoor and outdoor areas
- Fully automatic ventilation as soon as the absolute humidity inside is greater than outside
- Frost protection function: System shutdown when the internal room temperature is below 5 °C
- When a relative humidity of less than 30% is reached, the dry protection function ensures fan shutdown; e.g. in rehearsal rooms with musical instruments
- Manual system activation using a switch is possible

### AKE

- Automatic cellar dehumidification control system with an internal and external sensor
- External sensor with a 15-m-long cable that can be positioned freely
- Internal sensor integrated within the control system housing
- 2 switching outputs for the connection of 1- or 3-phase fans
- Air can be extracted from rooms of any size
- Fans with a consumption > 1 A can be connected with an intermediate relay or contactor (e.g. US T16)

# Demand-driven, energy-efficient and fully automatic cellar dehumidification



System 2: **AKE 100 / AKE 150** for new buildings and redevelopments

**AKE 100 / AKE 150** application area

MAICO's AKE 100 and AKE 150 ventilation systems for demand-driven dehumidification of cellars extract air fully automatically and reliably.

Humid basement air is only automatically extracted if the fresh outside air supply is drier. This prevents the formation of condensation on the cold cellar walls even when the outside air humidity is high and ensures the drying of the room.

- Cellar or individual cellar rooms
- Utility rooms
- Drying rooms
- Laundry rooms, etc.



**AKE 100 / AKE 150** fans  
with sensor



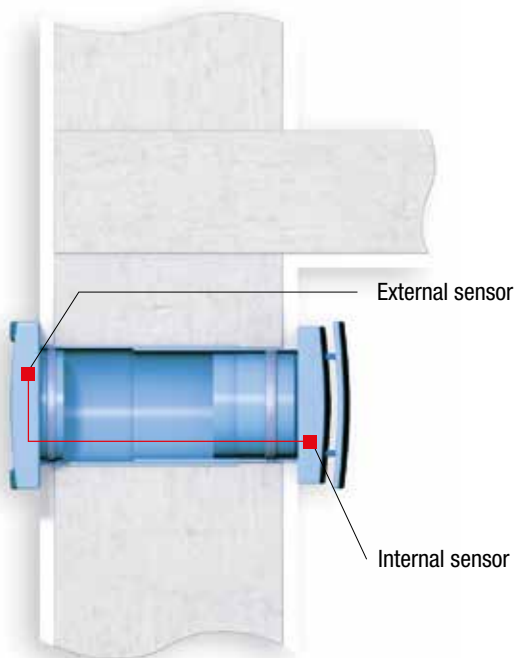
**External shutter**  
with sensor

## Mode of operation and technical details

- Internal and external humidity and temperature sensors
- Conversion of the measured relative humidity into absolute humidity
- Constant comparison of the absolute humidity between the indoor and outdoor areas
- Fully automatic ventilation as soon as the absolute humidity inside is greater than outside
- Frost protection function: System shutdown when the internal room temperature is below 5 °C
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- Manual system activation using a switch is possible

# AKE cellar dehumidification retrofits – without costly construction work

AKE 100 application example in a utility room



## AKE 100 and AKE 150 with an integrated fan

As stand-alone ventilation systems, the AKE 100 and AKE 150 are perfect for independent dehumidification of cellars and utility rooms.



**Animated video**  
Quick and easy installation



**AKE 100** Art. no. 0084.0220  
**AKE 150** Art. no. 0084.0099



**WH 100** Art. no. 0059.1030  
**WH 150** Art. no. 0059.1050

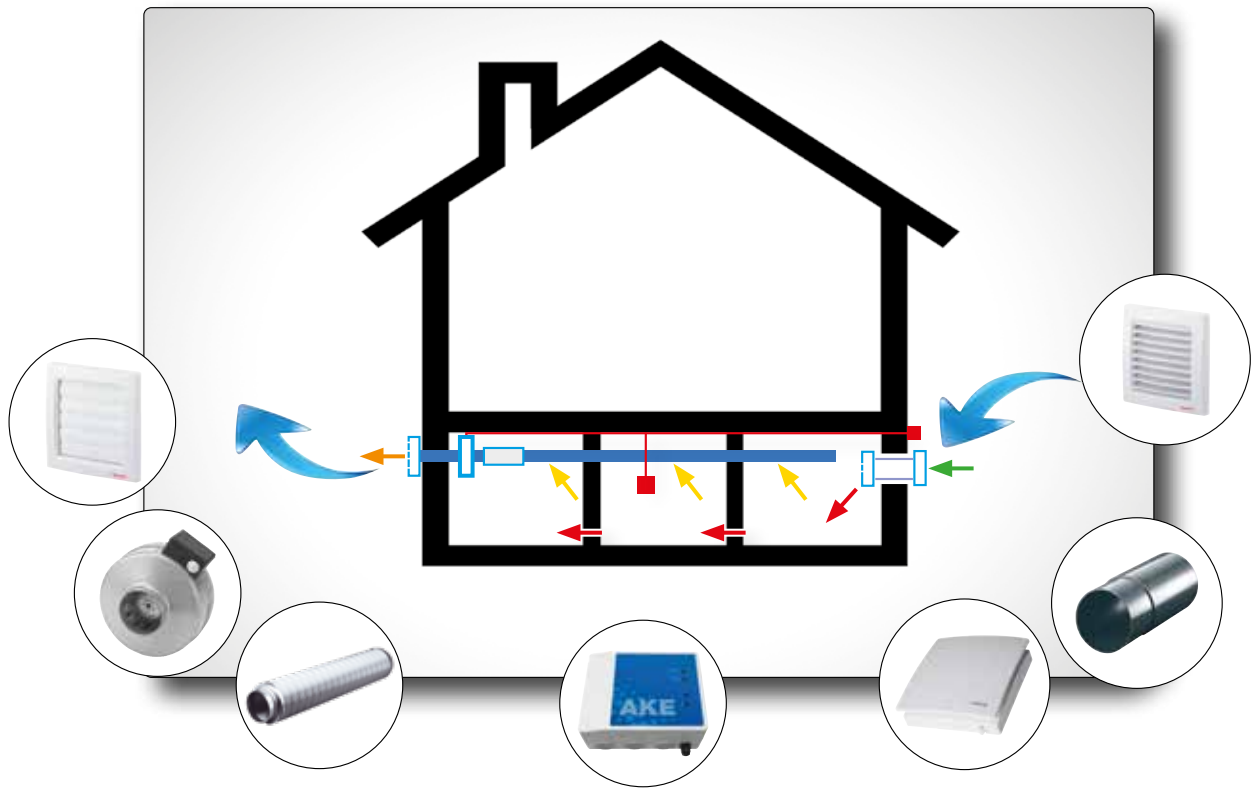
## AKE 100

- Automatic cellar dehumidification control system integrated in an exhaust air unit with internal and external sensor
- Can be used individually for up to 30 m<sup>2</sup>
- Additional fans without separate dew point control systems can be connected to the dew point control system up to a max. 600 mA
- Fans > 600 mA can be connected with an intermediate relay or contactor
- The dehumidification of larger areas is possible with additional fans
- Simple installation, core drill hole 120 mm when installed with WH 100 wall sleeve

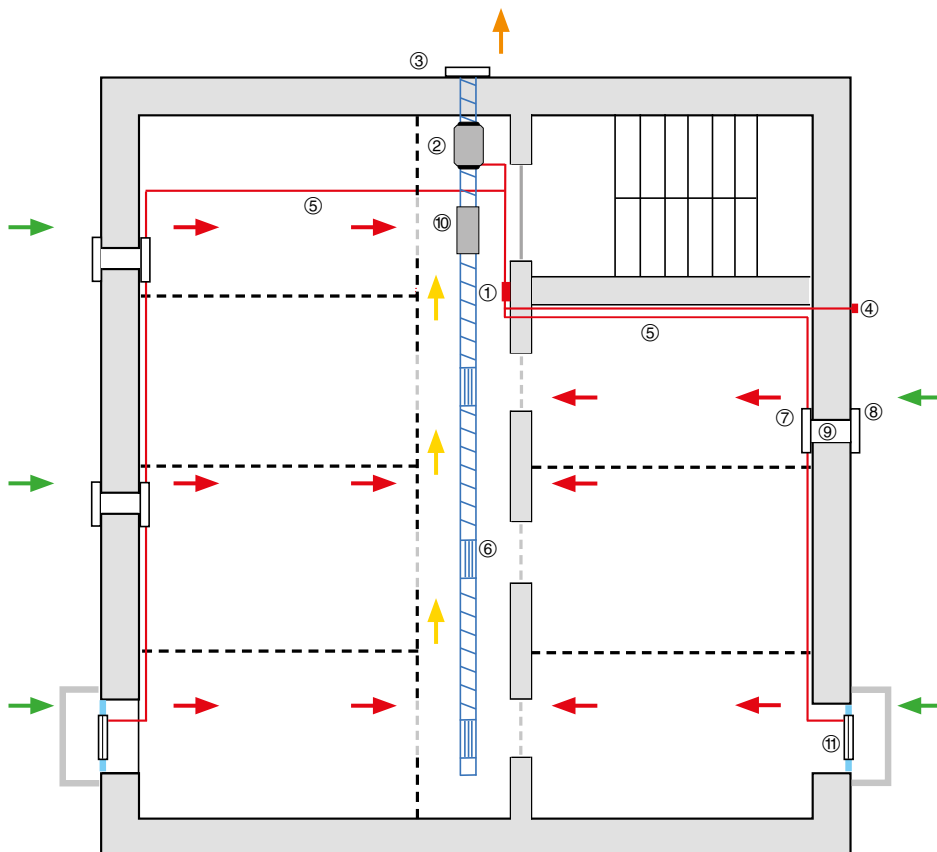
## AKE 150

- Automatic cellar dehumidification control system integrated in an exhaust air unit with internal and external sensor
- Can be used individually for up to 70 m<sup>2</sup>
- Additional fans without separate dew point control systems can be connected to the dew point control system up to a max. 600 mA
- Fans > 600 mA can be connected with an intermediate relay or contactor
- The dehumidification of larger areas is possible with additional fans
- Simple installation, core drill hole 180 mm when installed with WH 150 wall sleeve

# AKE control system with powerful fans and passive air supply



Fans are selected based on the size of the rooms to be ventilated.



## The AKE control system for new buildings and redevelopments

### With exhaust air fan and passive supply air

- ① AKE control system with internal sensor
- ② Duct fan; e.g. ERR for exhaust air
- ③ AP/AS shutter
- ④ External sensor
- ⑤ Control cable
- ⑥ Exhaust air duct with exhaust air grille
- ⑦ AE internal shutter
- ⑧ External grille
- ⑨ Wall sleeve
- ⑩ Tubular sound absorber

AKE control system with internal and external sensor **0157.0129**

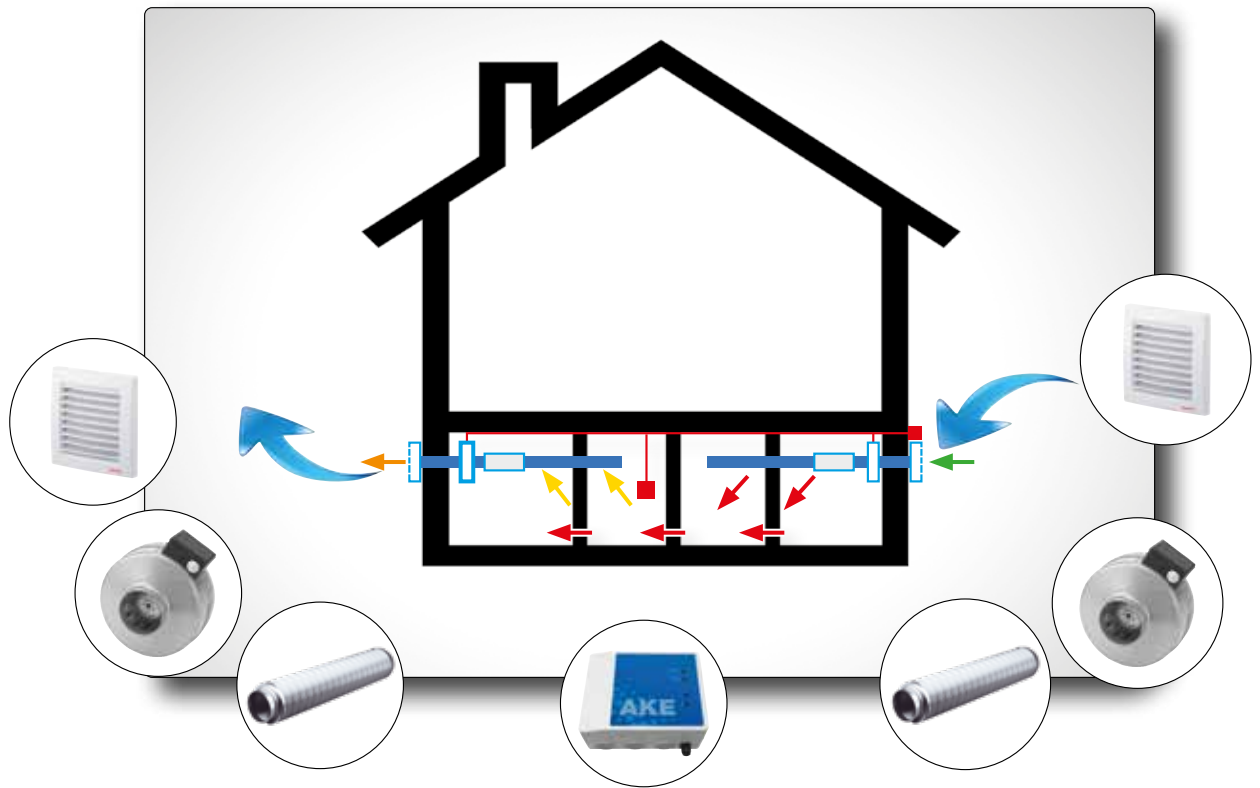
Additional accessory article numbers depending on the duct network dimensions

Light shaft installation situation

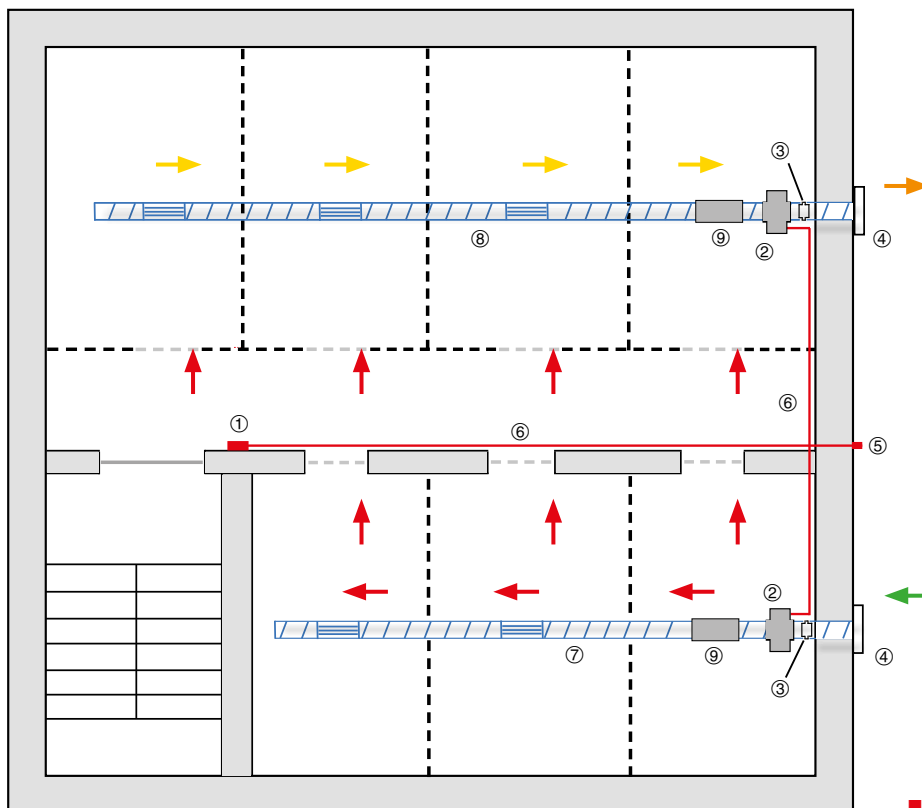
- ⑪ AE 10/1
- ⑫ FE 100/1 SG

■ Supply air ■ Exhaust air ■ Outside air ■ Outgoing air

# AKE control system with powerful fans and active air supply



Fans are selected based on the size of the rooms to be ventilated.



## The AKE control system for new buildings and redevelopments

### With exhaust air and supply air fan

- ① AKE control system with internal sensor
- ② Duct fan; e.g. ERR for exhaust air or supply air
- ③ Automatic AVM backflow preventer
- ④ External grille
- ⑤ External sensor
- ⑥ Control cable
- ⑦ Supply air duct with exhaust air grille
- ⑧ Exhaust air duct with exhaust air grille
- ⑨ Tubular sound absorber

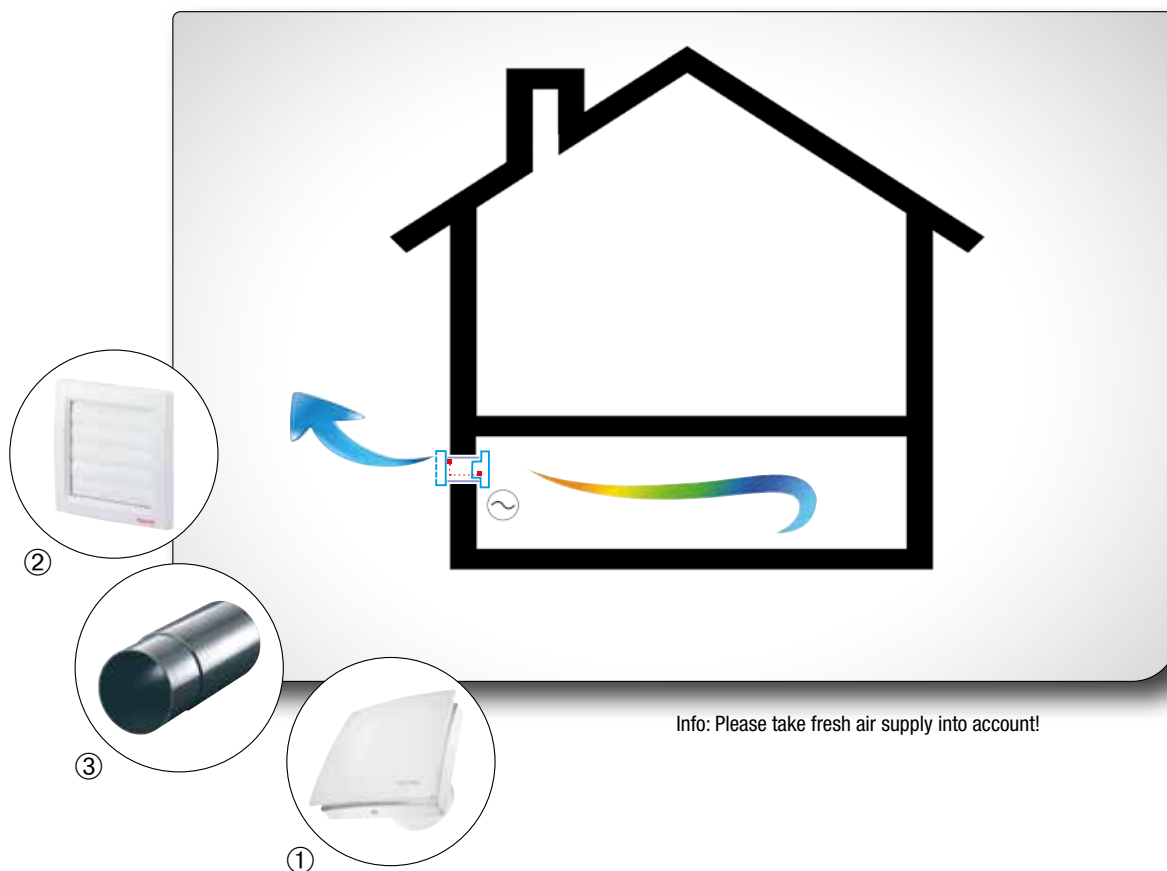
AKE control system with internal and external sensor **0157.0129**

Additional accessory article numbers depending on the duct network dimensions

■ Supply air ■ Exhaust air ■ Outside air ■ Outgoing air

# AKE 100 | AKE 150 standard versions

The right solution for every installation situation



Info: Please take fresh air supply into account!

## Standard versions of the AKE 100

AKE 100 automatic cellar dehumidification system

- ① Fan with
- ② External shutter and sensors Art. no. 0084.0220

- ③ WH 100 wall sleeve, removable Art. no. 0059.1030

## Standard versions of the AKE 150

AKE 150 automatic cellar dehumidification system

- ① Fan with
- ② External shutter and sensors Art. no. 0084.0099

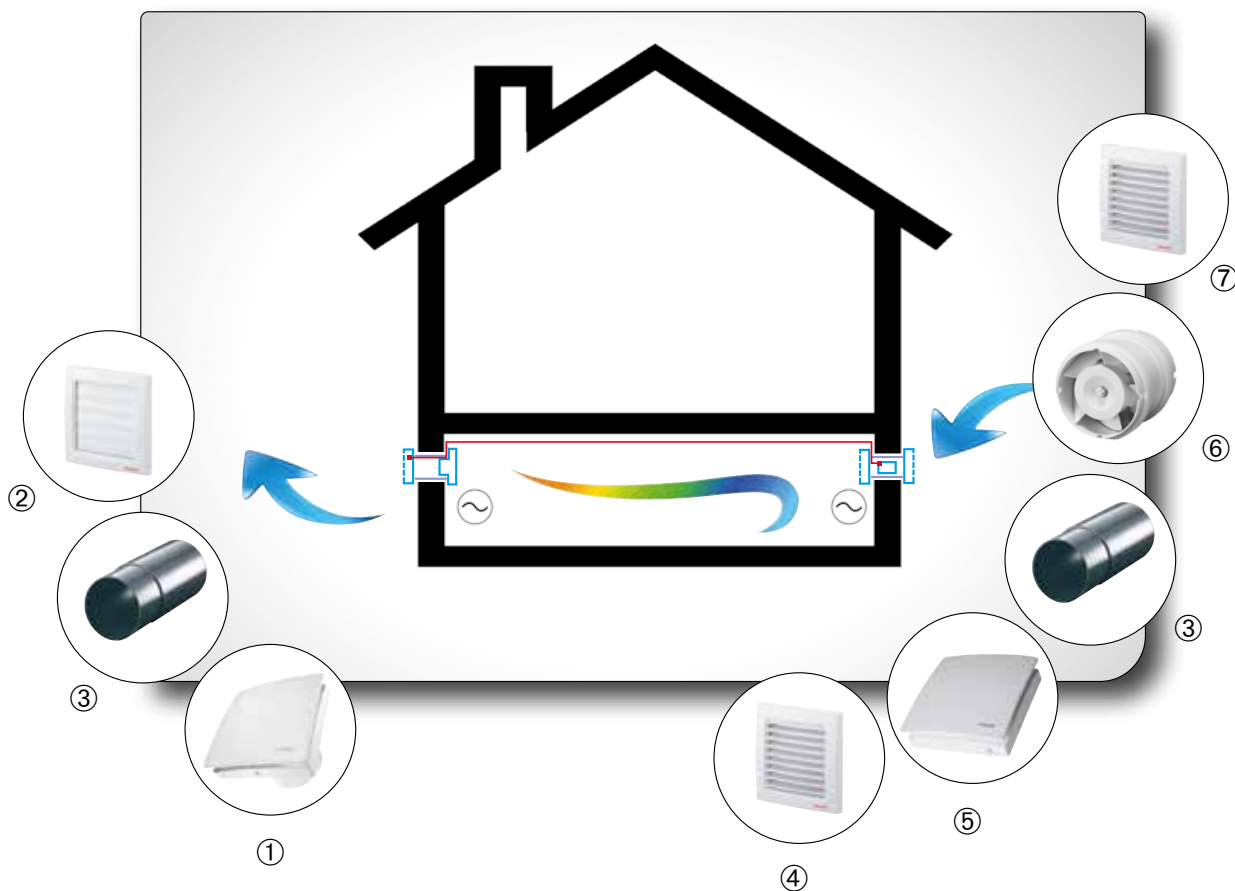
- ③ WH 150 wall sleeve, removable Art. no. 0059.1050

AKE type	Use up to max.
AKE 100 WH 100	30 m <sup>2</sup>
AKE 150 WH 150	70 m <sup>2</sup>



# AKE 100 | AKE 150 with active air supply

The right solution for every installation situation



## AKE 100

AKE 100 automatic cellar dehumidification system

- |                                 |                    |
|---------------------------------|--------------------|
| ① Fan with                      |                    |
| ② External shutter and sensors  | Art. no. 0084.0220 |
| ③ WH 100 wall sleeve, removable | Art. no. 0059.1030 |

## AKE 150

AKE 150 automatic cellar dehumidification system

- |                                 |                    |
|---------------------------------|--------------------|
| ① Fan with                      |                    |
| ② External shutter and sensors  | Art. no. 0084.0099 |
| ③ WH 150 wall sleeve, removable | Art. no. 0059.1050 |

## Active air supply components

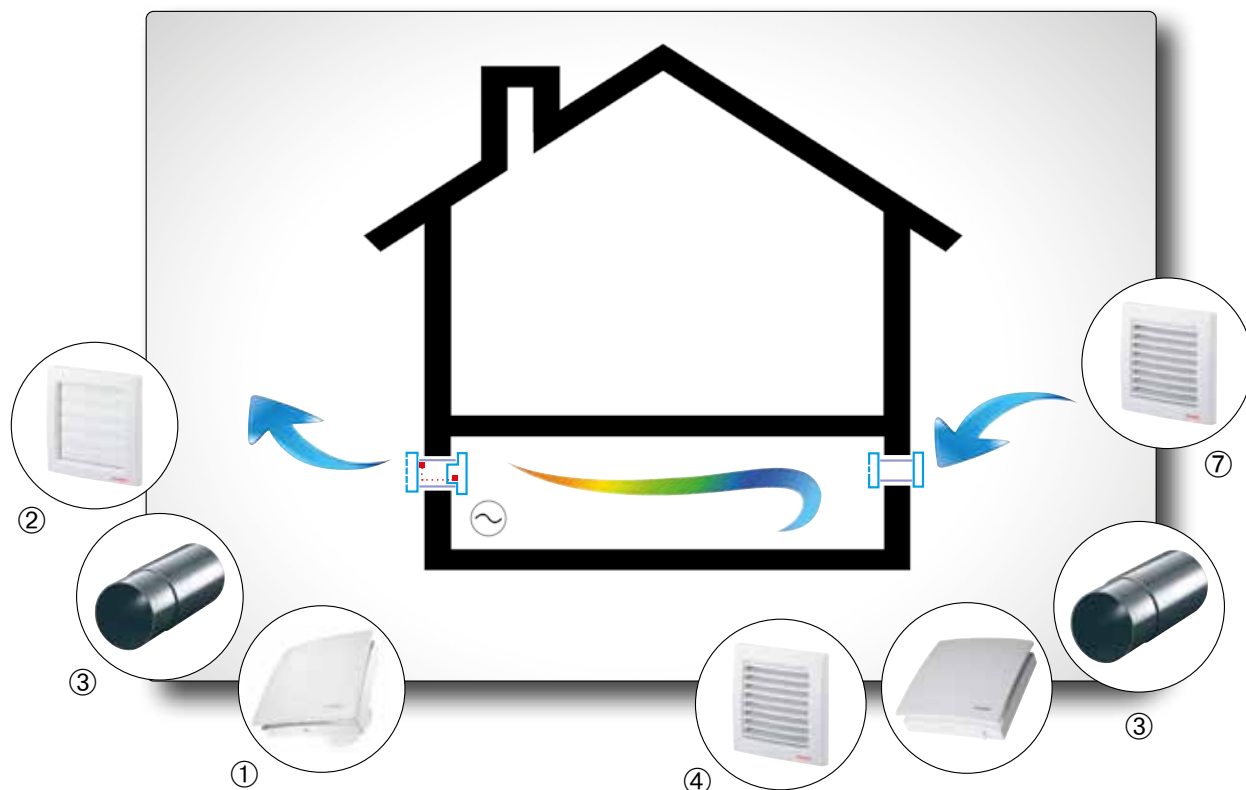
- |   |                    |
|---|--------------------|
| ④ SG 100 grille                                       | Art. no. 0059.1054 |
| or  |                    |
| ⑤ AE 10/1 electrical internal shutter                 | Art. no. 0151.0400 |
| ③ WH 100 wall sleeve, removable                       | Art. no. 0059.1030 |
| ⑥ ECA 11 E duct-mounted fan<br>Supply air fan, DN 100 | Art. no. 0080.0460 |
| ⑦ SG 100 grille                                       | Art. no. 0059.1054 |

## Active air supply components

- |   |                    |
|---|--------------------|
| ④ SG 150/1 grille                                       | Art. no. 0059.0997 |
| or  |                    |
| ⑤ AE 15/1 electrical internal shutter                   | Art. no. 0151.0401 |
| ③ WH 150 wall sleeve, removable                         | Art. no. 0059.1050 |
| ⑥ ECA 15/4 E duct-mounted fan<br>Supply air fan, DN 150 | Art. no. 0080.0991 |
| ⑦ SG 150/1 grille                                       | Art. no. 0059.0997 |

# AKE 100 | AKE 150 with passive air supply

The right solution for every installation situation



Info: Please take into account the number of outside air openings!

## AKE 100

AKE 100 automatic cellar dehumidification system

① Fan with	
② External shutter and sensors	Art. no. 0084.0220
③ WH 100 wall sleeve, removable	Art. no. 0059.1030

## Passive air supply components

### Version A

⑤ AE 10/1 electrical internal shutter	Art. no. 0151.0400
③ WH 100 wall sleeve, removable	Art. no. 0059.1030
⑦ SG 100 grille Art. no. 0059.1054	

### Version B

④ SG 100 grille Art. no. 0059.1054	
③ WH 100 wall sleeve, removable	Art. no. 0059.1030
⑦ SG 100 grille Art. no. 0059.1054	

## AKE 150

AKE 150 automatic cellar dehumidification system

① Fan with	
② External shutter and sensors	Art. no. 0084.0099
③ WH 150 wall sleeve, removable	Art. no. 0059.1050

## Passive air supply components

### Version A

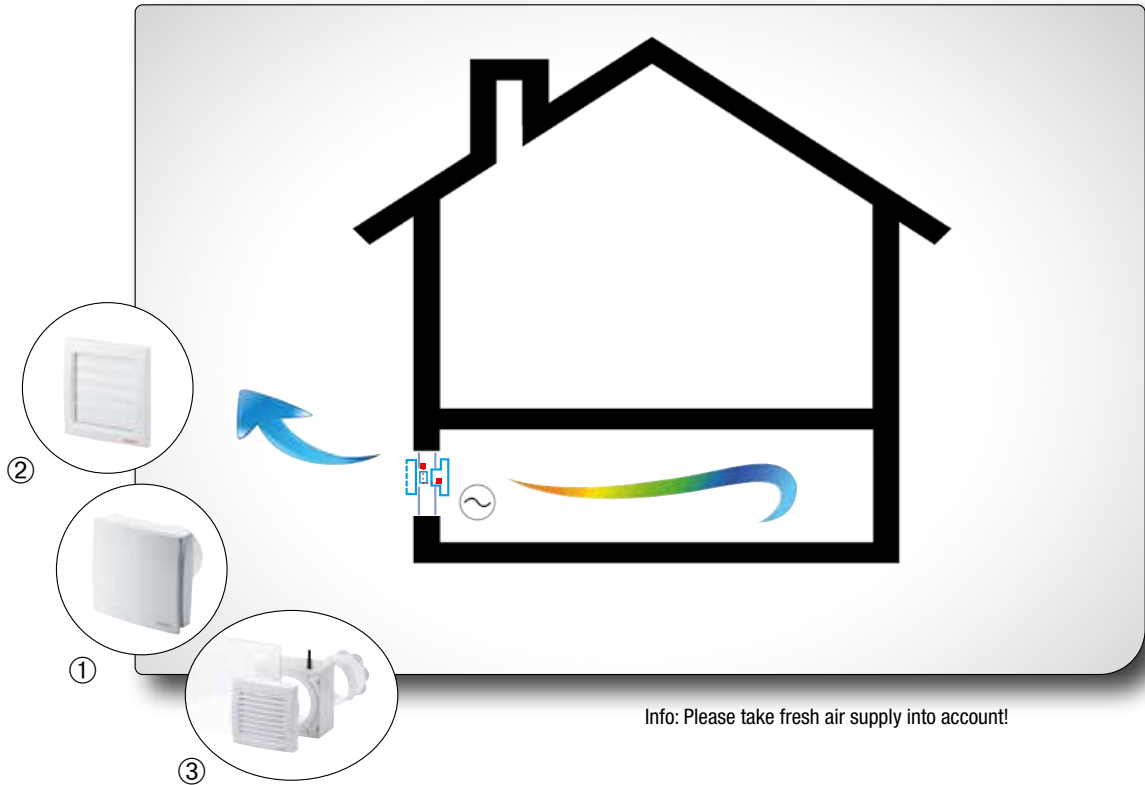
⑤ AE 15/1 electrical internal shutter	Art. no. 0151.0401
③ WH 150 wall sleeve, removable	Art. no. 0059.1050
⑦ SG 150/1 grille	Art. no. 0059.0997

### Version B

④ SG 15 grille Art. no. 0059.0904	
③ WH 150 wall sleeve, removable	Art. no. 0059.1050
⑦ SG 150/1 grille	Art. no. 0059.0997

# AKE 100 | AKE 150 with window installation kit

The right solution for every installation situation



Info: Please take fresh air supply into account!

## Optional version with AKE 100 Window installation kit

AKE 100 automatic cellar dehumidification system

- ① Fan with
- ② External shutter and sensors Art. no. 0084.0220

- ③ FE 100/1 SG window installation kit  
with fixed external grille Art. no. 0093.0500

AKE type	Use up to max.
<b>AKE 100</b> WH 100	30 m <sup>2</sup>
<b>AKE 150</b> WH 150	70 m <sup>2</sup>

# Technical data

## AKE

Air volume	Any
Voltage type	Single-phase AC
Input voltage	230 V, 50 Hz
Frequency	50 Hz
Switching capacity	1 A
Output quantity	2
Protection class	Control system: IP 40 External sensor: IP 54

## Standard versions of the AKE 100

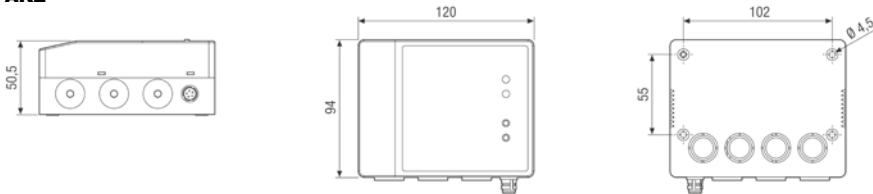
Air volume	92 m <sup>3</sup> /h
Voltage type	Single-phase AC
Input voltage	230 V
Frequency	50 Hz
Power consumption	8 W
I <sub>max</sub>	0.06 A
Protection class	IP X4

## Standard versions of the AKE 150

Air volume	250 m <sup>3</sup> /h
Voltage type	Single-phase AC
Input voltage	230 V
Frequency	50 Hz
Power consumption	15/19 W
I <sub>max</sub>	0.09 A
Protection class	IP X5

## Dimensional drawings

### AKE



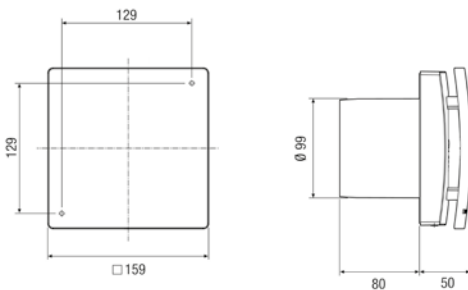
### Scope of delivery:

Control system with internal sensor, external sensor with 15-m-long connecting cable

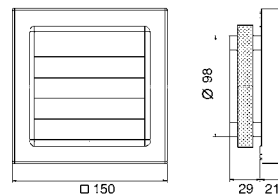
### Recommended accessories

See floor plans on pages 6 and 7

### AKE 100 Fan with internal sensor



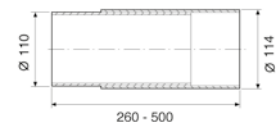
### External shutter with external sensor



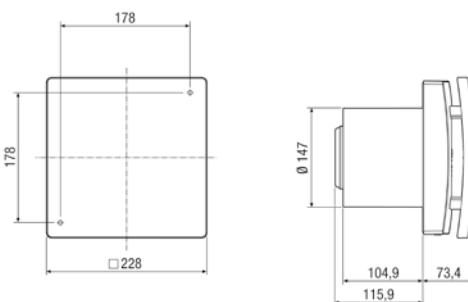
### Recommended accessories

WH 100 wall sleeve optional

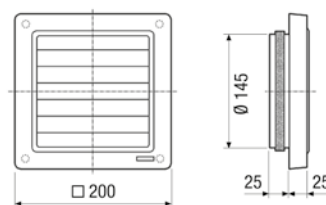
Art. no. 0059.1030



### AKE 150 Fan with internal sensor



### External shutter with external sensor



### Recommended accessories

WH 150 wall sleeve optional

Art. no. 0059.1050

