Comfortable climate with pre-heated, filtered supply air.



Supply air, heating and filter in a single unit. For direct in-duct mounting.

The fresh air boxes ALB from Helios ensure a pleasant room climate due to the inflow of outside air, which is filtered and heated to the specified temperature.

ALB are ideally suited to all rooms in which clean, preheated fresh air is required. Whether in bistros, boutiques or other commercial areas. Specially equipped attenuator casing and low-noise centrifugal fans ensure that the fresh air boxes are virtually silent. \_\_\_\_\_

Large surface pocket filters ensure that cleaning intervals are as long as possible.

Control options for great levels of comfort and efficient energy-saving are included in the delivery or available as accessories.

#### EH MODEL WITH ELECTRIC HEATING

ALB EH With electric heating and air filter. Stepless control of heating output.

Ø 125 and 200 mm.

#### WW MODEL WITH WARM WATER HEATING

6

#### ALB WW

With warm water heating and air filter. Delivered ready-for-connection, including control unit and room filter.

Ø 220 and 280 mm. 50 x 30 cm and 60 x 35 cm.

286<sup>on</sup> **290<sup>on</sup>** 



- The Helios fresh air boxes ALB are designed for direct in-duct mounting and ensure controlled supply of filtered and pre-heated outside air in restaurants, bistros, office rooms, etc. V = 350 m<sup>3</sup>/h to 5000 m<sup>3</sup>/h. Available options:
  - ALB EH
  - with electric heating and air filter. – ALB WW

with warm water heating and air filter.

#### Delivery

Delivered ready for connection, i.e. the air-conditioning with filter and heater battery is integrated in the compact units in addition to the fan unit.

#### Planning

The complete set significantly simplifies the planning stage. Planning is reduced to simply five steps:

- Decide on the required amount of supply air for the rooms.
- ② Decide on the dimensions and position of the supply duct (resistance).
- ③ Decide on the heat required comparing the temperature of the outside air and the indoor temperature (using diagrams on the product pages).
- ④ Choose the suitable ALB size according to points 1, 2 and 3.
- ⑤ Select the control functions and the accessories.

#### Application

- Outside air and supply air boxes can be used everywhere where controlled and filtered supply air that is pre-heated to the specified temperature is required.
- Reduces draughts in living areas.
   For ensuring the necessary air exchange through an appropriate balance between supply air and extract air in rooms.
- For temperature conditioning and heating rooms.
- Fulfilment of hygienic requirements for room air in bistros, offices and meeting rooms as well as equivalent living rooms according to VDI 6022.
- □ For single-stage filtration, filter class F7 and filter monitoring (using differential pressure switch type DDS, accessories) must always be provided pursuant to VDI 6022.
- Targeted, controlled and lownoise inflow of outside air into the desired areas. If necessary, an attenuator (accessories) must be provided.

#### Installation

- Can be installed in almost any position (see installation and operating instructions).
- ☐ If necessary, an attenuator must be provided in the ducting system (accessories).
- Backdraught shutters or motorised shutters must be installed in the ducting to prevent undesired backflow of air.
- We recommend using anti-vibration mounts when securing the unit.
- The controller should be fitted within the ventilated space.
   Easy access to the unit should
- be provided for cleaning according to DIN EN 13779 and VDI 6022.

#### Control options

- Easy to control, the ALB offers the highest comfort and efficient energy-saving operation.
- Thus, the types ALB EH are delivered with a stepless electronic heater controller as standard, which is controlled via the operating switch B-ALB (accessories) (see Fig. 1). The electronic pulser steplessly controls the heat output by continuously adjusting between the specification and the temperature measured by the room or duct sensor (types TFR-ALB and TFK, accessories).
- Types ALB WW are delivered as standard with an external control unit (see Fig. 2). There is constant adjustment between the specification and the temperature measured by the room sensor (delivered as standard). Furthermore, the control unit also offers inputs for the connection of a humidity or air quality sensor, so that if the values fall below a given limit value, an optical or audiable alarm signal occurs.
- The control unit ALB-AS (accessories) can be used to control one or more extract air fans in relation to the speed of fresh air boxes ALB.

This allows the synchronised operation of the unit as required (supply and extract air) with five speed stages. The control unit also offers in-

Ine control unit also offers inputs for a duct sensor (delivered as standard), as well as a connection for a humidity or air quality sensor.

#### Outside air fans with integrated heating Product-specific information





#### Accessories

#### Fig. 2: Functional overview ALB WW with warm water heating



#### Figure 1 ALB-EH

Accessories:
 Operating switch B-ALB
 Backdraught shutter RSK
 Differential pressure switch DDS
 Room sensor TFR-ALB
 Duct sensor TFK
 Attenuator, e.g. FSD

#### Figure 2 ALB-WW

 Delivery includes: External control unit with integrated room sensor and week timer.
 Accessories:

Hydraulic unit WHSH HE Differential pressure switch DDS Shutter, e.g. JVK Attenuator, e.g. KSD Adaptor ALB-ÜS Air quality sensor KWL-CO<sub>2</sub> Humidity sensor KWL-FTF



Application / Function Pleasant room climate through the inflow of outside air, which is filtered and automatically heated to the specified temperature. This is provided by the fresh air boxes from Helios.

Specially designed for direct induct mounting.

For various applications in the commercial sector.

#### Specification

Compact shallow casing, thermally and acoustically insulated, with an integral air filter, fan, heater with controller and terminal box. Delivered ready for installation.

Delivered as standard with an electronic stepless heating controller. Operation switch B-ALB is required for remote control, which allows for three-step ventilation and connection to a room or duct temperature sensor to control the specified setpoint temperature. These elements need to be ordered separately (see accessories).

#### Casing

Made from galvanised sheet steel, with 50 mm mineral wool cladding on all sides, which is also clad with dirt-repellent fibre glass. The casing cover is easy to remove using the four spring fasteners.

Intake and extract duct spigots with air tight rubber gaskets for standard duct  $\emptyset$ .

#### Filter

The large surface pocket filter for long cleaning intervals is by removing the casing cover. Standard version in class G4. Higher classification filters in M5 and F7 (see accessories) are available as alternatives. The reduction of the volume flow (see performance curve) must be considered. Periodic filter control / cleaning is required. Automatic monitoring with DDS (accessory) is recommended; the ALB casing has the corresponding fixing holes.

#### 🗆 Fan

The air flow volume can be switched in three stages with the operating switch. A silent and powerful centrifugal fan, installed within a spiral casing made from galvanised sheet steel. Motor/impeller unit swings out for access and freely accessible. Powered by a maintenance-free external rotor motor. Protection class IP 44.

#### Heater battery

Enclosed heater elements made from stainless steel with low surface temperature heat the outside air to the specified setpoint temperature. The electronic pulser steplessly controls the heating output in steady balance between the specification and the temperature measured by the room or duct sensor.

#### Safety switch

The heater battery can only be operated if the fan is on and there is a minimum air flow. If the air-flow falls below this limit, a thermostat disconnects the heater from the power supply as soon as the temperature rises to 80 °C.

Additionally, two independent thermostats can be reset manually if the heater is stopped when the heater temperature rises to 120 °C.



#### Overrun timer

The ALB comes with an overrun timer of approx. 1 minute, even if the heater is not in operation.

#### Electrical connection

A large terminal box in the casing.

Cable entry points at the front through four cable glands.

#### Motor protection

Motor protection by thermal contacts wired in series with the motor windings. The main supply must be switched off and on again to reset the thermal contacts.

#### Sound levels

Total sound power levels and the spectrum figures in db(A) are given for:

 Sound level case breakout
 Sound level intake / extract
 The table below also contains the sound pressure levels at
 1 m (free field conditions).
 If necessary, cross talk attenuators are available (accessory) for further acoustic reduction.

Туре	Ref. no.	Connection Ø	Air flow volume* free discharge	Max. R.P.M.	Sound pre case breakout	ssure level supply air noise	Voltage 50 Hz	Pov consur Motor	wer mption Heating	Current max. total	Wiring diagram	Maximum sup for ope with heating	oply air temp. eration w/o heating	Weight net approx.
		mm	♡ m³/h (max.)	min-1	dB(A) at 1 m	dB(A) at 1 m	Volt	kW	kW	А	No.	+°C	+°C	kg
ALB 125 C EH 2	2701	125	340	1850	42	57	230, 1~	0.110	2	9.2	795.4	20	40	20

\* with standard filter, class G 4

#### ALB 125 C EH 2





#### Note

The integration of air filter ELF-ALB 125 F7 (see right) and differential pressure switch DDS (Ref. no. 0445) in fresh air systems fulfills the requirements of VDI 6022.

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Information	Page	Other accessories
Techn. description Information for planning	285 10 on	Attenuators Flexible ducting, grilles, moulded parts, electr. shutters, Roof outlets Supply air valves

Accessories Operating switch

# Type B-ALBRef. no. 2734With functions:

- a) Ventilation operation 3-step and on/off.
- b) Heater battery with adjustable temperature when sensors are connected.
- c) Overrun operation of the fan.
- d) Filter monitoring (accessory DDS)

e) Operating display (LED). Protection class IP 30 Wiring diagram no. 795.3 Dim. mm W 145 x H 80 x D 30

#### Room sensor

Type TFR-ALBRef. no. 2761Room temperature sensor surface<br/>mounted for connection to opera-<br/>tion switch B-ALB. Made of poly-<br/>mer.Temperature range0 - 30 °CProtection classIP 20Dim. mmW 86 x H 86 x D 30Weight approx.0.1 kg

#### Duct sensor

Type TFKRef. no. 5005Temperature sensor to be installed<br/>within the duct for connection to<br/>operation switch B-ALB.Temperature range0 - 30 °CProtection classIP 20Length inner/outer130/50 mm, Ø 10 mmWeight approx.0.1 kg

ELF-ALB 125 G4 Ref. no. 2704

ELF-ALB 125 F7 Ref. no. 2706

Large surface pocket filter for long

Type ALB-AS 125 Ref. no. 2696 A control unit for the regulation of an extract air fan (max. 1.5 A) at the same rate as the speed of the supply air fan. Allows synchronised operation of the unit (supply and extract air) with three (from 5 selectable) speed steps (factory setting 80, 130, 230 V). The control unit is connected with the supply system through a cable, the setting takes place directly at the operating switch B-ALB (accessories,

Ref. no. 2734). ALB-AS allows the connection of one or many speed controllable fans up to nominal load. An extract and supply air shutter can also be operated, which open when the fan is

switched on.

Differential pressure switchType DDSRef. no. 0445Adjustable opener/closer for moni-

Ref. no. 2705

Spare and pollen filters

ELF-ALB 125 M5

cleaning intervals.

Contents = 3 pcs.

toring pressure loss. Extract air control

# 









### Technical data

vonayo	200 V 1~, 00 112
	400 V 2~, 50 Hz
Current max.	13.3 A
Protection class	IP 54
Dim. mm	W 236 x H 316 x D 128
Weight approx.	4.3 kg
Wiring diagram no	. 900

# Fresh air box ALB EH 125 mm ø with electric heater battery and air filter

Box fans

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220 V 1 50 Uz



Application / Function Pleasant room climate through the inflow of outside air, which is filtered and automatically heated to the specified temperature. This is provided by the fresh air boxes from Helios.

Specially designed for direct induct mounting.

For various applications in the commercial sector.

#### Specification

Compact shallow casing, thermally and acoustically insulated, with an integral air filter, fan, heater with controller and terminal box. Delivered ready for installation.

Delivered as standard with an electronic stepless heating controller. Operation switch B-ALB is required for remote control, which allows for three-step ventilation and connection to a room or duct temperature sensor to control the specified setpoint temperature. These elements need to be ordered separately (see accessories).

#### Casing

Made from galvanised sheet steel, with 50 mm mineral wool cladding on all sides, which is also clad with dirt-repellent fibre glass. The casing cover is easy to remove using the four spring fasteners.

Intake and extract duct spigots with air tight rubber gaskets for standard duct  $\emptyset$ .

#### Filter

The large surface pocket filter for long cleaning intervals is freely accessible by removing the casing cover. Standard version in class G4. Higher classification filters in M5 and F7 (see accessories) are available as alternatives. The reduction of the volume flow (see performance curve) must be considered. Periodic filter control / cleaning is required.

Automatic monitoring with DDS (accessory) is recommended; the ALB casing has the corresponding fixing holes.

#### 🗌 Fan

The air flow volume can be switched in three stages with the operating switch. A silent and powerful centrifugal fan, installed within a spiral casing made from galvanised sheet steel. Motor/impeller unit swings out for access and freely acces-

sible. Powered by a maintenance-free external rotor motor. Protection class IP 44.

#### Heater battery

Enclosed heater elements made from stainless steel with low surface temperature heat the outside air to the specified setpoint temperature. The electronic pulser steplessly controls the heating output in steady balance between the specification and the temperature measured by the room or duct sensor.

#### Safety switch

The heater battery can only be operated if the fan is on and there is a minimum air flow. If the air-flow falls below this limit, a thermostat disconnects the heater from the power supply as soon as the temperature rises to 80 °C. Additionally, two independent thermostats can be



reset manually if the heater is stopped when the heater temperature rises to 120 °C.

#### Overrun timer

The ALB comes with an overrun timer of approx. 1 minute after the disconnection of the unit, even if the heater is not in operation.

#### Electrical connection

A large terminal box in the casing.

Cable entry points at the front through four cable glands.

#### Motor protection

Motor protection by thermal contacts wired in series with the motor windings. The main supply must be switched off and on again to reset the thermal contacts.

#### Sound levels

- Total sound power levels and the spectrum figures in db(A) are given for:
- Sound level case breakout
   Sound level intake / extract
   The table below also contains the sound pressure levels at
   1 m (free field conditions).
   If necessary, cross talk attenuators are available (accessory) for further acoustic reduction.

Туре	Ref. no.	Connection Ø	Air flow volume* free discharge	Max. R.P.M.	Sound pres case breakout	ssure level supply air noise	Voltage 50 Hz	Po consu Motor	wer mption Heating	Current max. total	Wiring diagram	Maximum su for op with heating	pply air temp. eration w/o heating	Weight net approx.
		mm	<sup>1</sup> /h (max.)	min <sup>-1</sup>	dB(A) at 1 m	dB(A) at 1 m	Volt	kW	kW	А	No.	+°C	+°C	kg
ALB 200 B EH 5	2702	200	650	2500	45	59	400, 2 N~	0.105	4,4	11.6	795.4	20	40	33
ALB 200 C EH 5	2703	200	770	2740	46	63	400, 2 N~	0.150	4,4	11.7	795.4	20	40	32
with standard filter, c	lass G 4													

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#### ALB 200 B EH 5



#### ALB 200 C EH 5





#### Note

The integration of air filter ELF-ALB 200 F7 (see right) and differential pressure switch DDS (Ref. no. 0445) in fresh air systems fulfills the requirements of VDI 6022.

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Information	Page	Other accessories
Techn. description Information for planning	285 10 on	Attenuators Flexible ducting, grilles, moulded parts, electr. shutters, Roof outlets Supply air valves
		Roof outlets Supply air valves

#### Accessories

#### Operating switch Type B-ALB Ref. no. 2734

- With functions: a) Ventilation operation 3-step and on/off.
- b) Heater battery with adjustable temperature when sensors are connected.
- c) Overrun operation of the fan.
- d) Filter monitoring (accessory DDS)

e) Operating display (LED). Protection class IP 30 Wiring diagram no. 795.3 Dim. mm W 145 x H 80 x D 30

#### Room sensor

Type TFR-ALBRef. no. 2761Room temperature sensor surface<br/>mounted for connection to opera-<br/>tion switch B-ALB. Made of poly-<br/>mer.Temperature range0 - 30 °CProtection classIP 20Dim. mmW 86 x H 86 x D 30Weight approx.0.1 kg

#### Duct sensor

Type TFKRef. no. 5005Temperature sensor to be installed<br/>within the duct for connection to<br/>operation switch B-ALB.Temperature range0 - 30 °CProtection classIP 20Length inner/outer130/50 mm, Ø 10 mmWeigth approx.0.1 kg

Spare and pollen filtersELF-ALB 200 G4Ref. no. 2707ELF-ALB 200 M5Ref. no. 2708ELF-ALB 200 F7Ref. no. 2709Large surface pocket filter for longcleaning intervals.Contents = 3 pcs.

#### Differential pressure switch

Type DDS Ref. no. 0445 Adjustable opener/closer for monitoring pressure loss.

#### Extract air control

Type ALB-AS 200 Ref. no. 2696 A control unit for the regulation of an extract air fan (max. 1.5 A) at the same rate as the speed of the supply air fan. Allows synchronised operation of the unit (supply and extract air) with three (from 5 selectable) speed steps (factory setting 80, 130, 230 V). The control unit is connected with the supply system through a cable, the setting takes place directly at the operating switch B-ALB (accessories, Ref. no. 2734). ALB-AS allows the connection of one or many speed controllable fans up to nominal load. An extract and supply air shutter can also be operated. which open when the fan is switched on.



Fresh air box ALB EH 200 mm ø

with electric heater battery and air filter









### Technical data

Voltage	230 V 1~, 50 Hz
	400 V 2~, 50 Hz
Current max.	13.3 A
Protection class	IP 54
Dim. mm	W 236 x H 316 x D 128
Weight approx.	4.3 kg
Wiring diagram no	. 900





ty sensor (see accessories) can be connected to the electronic system in the terminal box to control the specified setpoint

#### Casing

temperature.

timer.

Application / Function Pleasant room climate through the inflow of outside air, which is filtered and automatically heated to the specified temperature. This is provided by the fresh air boxes

Operational unit for connection

For various commercial applica-

Compact shallow casing, ther-

mally and acoustically insulated,

with an integral air filter, fan and

ready for connection with an ex-

ternal control box for operation

of the unit, including a 10 metre

long connection cable and integrated room sensor or week

The air quality sensor or humidi-

warm water heater. Delivered

from Helios.

tions.

to ducting systems.

Specification / Delivery

Robust construction made from coated sheet steel, doublewalled and filled with 30 mm thick mineral wool cladding on all sides. The hinged casing cover is easy to open for cleaning purposes using the screw connections.

Intake and extract duct spigots with air tight rubber gaskets for standard duct diameters. No thermal bridge, smooth surface for easy cleaning. Integrated mounting panel with anti-vibration dampers.

#### Filter

The large surface pocket filter for long cleaning intervals is freely accessible by removing the casing cover. Standard version in class G4. Higher classification filters in M5 and F7 (see accessories) are available as alternatives. The reduction of air

volume flow (see performance curve) must be considered. Periodic filter control / cleaning is required.

Automatic monitoring with DDS (accessory) is recommended; the ALB casing has the corresponding fixing holes. The filters correspond to VDI 6022, DIN EN 779.

#### Fan

The air flow volume can be switched in five stages with the operating switch.

A silent and powerful centrifugal fan, installed within a spiral casing made from galvanised sheet steel. Motor/impeller unit swings out for access and freely accessible. Powered by a maintenance-free ball bearing motor which is lubricated for life.

#### Heater battery

Air heater with AL fins and staggered copper ducting heats the outside air to the specified setpoint temperature. Controlled by connecting a hydraulic unit (accessories) via the integrated

control board.

There is a continuous adjustment between the specification and the temperature measured by the room or duct sensor (ALB-ASW included in delivery). A frost protection control is integrated as standard. Max. operating pressure 1.6 MPa. Water connection pipe with male thread.

#### Electrical connection

Large terminal box protected to IP 20 on outside of casing.

#### Motor protection

Through thermal contact wired in series with the motor windings. Once the unit has cooled down, automatic reconnection takes place.

#### Sound levels

The table below also contains the sound pressure levels at 1 m (free field conditions). If necessary, cross talk attenuators are available (accessory) for further acoustic reduction.

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#### Control

The remote control is included in delivery and offers:

#### 5-step operation.

- □ Temperature control with connection from room and/or duct temperature sensor (included in delivery).
- Anti-freeze protection.
- Control of the hydraulic unit (accessory) for regulation of the WW-heater battery. Specification of min./max. temperature.
- Operation of the extract air control ALB-ASW (accessories) for speed control of the extract fans
- □ Indication of surrounding temperature, fan speed and filter contamination (via differential pressure switch, accessory).

#### Further inputs and outputs:

- Automatic control of operation by means of week timer. □ Fault cause reporting, alarm.
- □ Input for air quality or humidity sensor.
- Output for e.g. damper control.



Remote control with connection cable (10 m) included in delivery.

Туре	Ref. no.	Air flow volume*	Max. R.P.M.	Sound pres	ssure level supply	Voltage 50 Hz	Por consul	wer mption	Current max. total	Wiring diagram	Maximum su for op	pply air temp. eration	Weight net
		free discharge		breakout	air noise		Motor	Heating			with heating	w/o heating	approx.
		<sup>™</sup> m³/h (max.)	min <sup>-1</sup>	dB(A) at 1 m	dB(A) at 1 m	Volt	kW	kW	А	No.	+°C	+°C	kg
ALB 220/4/50/30 WW	6500	3200	1460	53	71	230, 1~	1.3	—	6.10	1121	20	40	80

\* with standard filter, class G 4

#### ALB 220/4/50/30 WW



Other accessories	Page	Room sensors	Page
Attenuator Details Hydraulic unit	434 432	Co <sub>2</sub> and humidity sensor	87 on
Flexible ducting, grilles, moulded parts		Duct sensor for measuring Co <sub>2</sub> concentration or roon	g the n air
shutters	487 on	humidity in air ducts	
Supply air valves	510	upon i	request

- Heat output WW heater ①-③ Diagrams ①-③ show the heat output in relation to the flow/return and outdoor temperature over air flow volume.
- Water quantity WW heater ④ ④ shows the water flow in relation to the flow/return and outdoor temperature over air flow volume.
- Pressure loss WW heater (5) (5) shows the water pressure loss kPa over the water flow.



 $\circledast$  Water flow rate at 70/50 °C  $^{\mbox{\tiny 1)}}$ 



<sup>1)</sup> Correction factor for 80/50 °C: 1.16; for 55/45 °C: 1.81

① Heat output at temperature 80/60 °C										
kW							45			
30-						~	-10	ີ ເ		
					$\geq$	$\leq$	0°C	Ŭ		
20-				$\swarrow$	$ \$					
			$\square$							
10										
10-										
0-										
0 1000 2000 3000 Air flow volume m <sup>3</sup> /h										



0 1000 2000 3000 Air flow volume m<sup>3</sup>/h

0



#### Accessories Hydraulic unit

### WHSH HE 24 V (0-10 V) No. 8318

For regulation of the heat output of the water heater battery in connection with room/ duct sensor. Including flow/return temperature display, pump, servo motor, mixing valve, ball valve with integrated non-return valve, thermal casing and flexible connection hose.

#### Spare and pollen filters

Large surface pocket or cassette filters for long cleaning intervals, VDI 6022, DIN EN 779 compliant. Contents = 3 pcs. – Filter class G4

ELF-ALB 220/4/50/30 G4 No. 3646 - Filter class M5

ELF-ALB 220/4/50/30 M5 No. 3647

- Filter class F7 ELF-ALB 220/4/50/30 F7 No. 3648

#### Differential pressure switch

Type DDSRef. no. 0445Adjustable opener/closer for moni-<br/>toring pressure loss.

#### Connection cable (extra long) – 30 metres long Type ALB-SK 30 Ref. no. 2517 – 50 metres long Type ALB-SK 50 Ref. no. 2518

Connection between ALB and remote control and between ALB and ALB-ASW.

#### Adaptor – symmetrical

From device flange to circular ducting.

ALB-ÜS 220/4/50/30 No. 7515 Flexible sleeve

For acoustic decoupling, incl. 2 hose clamps. Type FM 315 Ref. no. 1674 Coupling flange ring made from galvanised sheet steel for connection to ducting.

Type FR 315 Ref. no. 1204

#### Extract air control

ALB-ASW 220/4/50/30 No. 3655 Control unit incl. duct temperature sensor for regulating an extract air fan in relation to the speed of the supply air fan.

Allows synchronised operation of the unit (supply and extract air) at five speed steps.

The control unit is connected with the supply systems by a control cable. The programming takes place in a few steps directly to the ALB-remote control

ALB-ASW is mountable in any position and allows the connection of one or many speed controllable 1 ph. fans up to nominal load.

#### Technical data

Voltage	230 V 1~, 50 Hz
Current max.	4 A
Protection class	IP 55
Dim. mm	B 390 x H 470 x T 135
Weight approx.	8.0 kg
Wiring diagram no.	1125











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Application / Function Pleasant room climate through the inflow of outside air, which is filtered and automatically heated to the specified temperature. This is provided by the fresh air boxes from Helios.

Operational unit for connection to ducting systems. For various commercial applications.

#### Specification / Delivery

Compact shallow casing, thermally and acoustically insulated, with an integral air filter, fan and warm water heater. Delivered ready for connection with an external control box for operation of the unit, including a 10 metre long connection cable and integrated room sensor or week timer.

The air quality sensor or humidity sensor (see accessories) can be connected to the electronic system in the terminal box to control the specified setpoint temperature.

#### Casing

Robust construction made from coated sheet steel, doublewalled and filled with 30 mm thick mineral wool cladding on all sides. The hinged casing cover is easy to open for cleaning purposes using the screw connections.

Intake and extract duct spigots with air tight rubber gaskets for standard duct diameters. No thermal bridge, smooth surface for easy cleaning. Integrated mounting panel with anti-vibration dampers.

#### Filter

The large surface pocket filter for long cleaning intervals is freely accessible by removing the casing cover. Standard version in class G4. Higher classification filters in M5 and F7 (see accessories) are available as alternatives. The reduction of air 4XM8 715 0.8 135

min, 715

volume flow (see performance curve) must be considered. Periodic filter control / cleaning is required. Automatic monitoring with DDS

600

(accessory) is recommended; the ALB casing has the corresponding fixing holes. The filters correspond to VDI 6022, DIN EN 779.

#### Fan

\_150

The air flow volume can be switched in five stages with the operating switch.

A silent and powerful centrifugal fan, installed within a spiral casing made from galvanised sheet steel. Motor/impeller unit swings out for access and freely accessible. Powered by a maintenance-free ball bearing motor which is lubricated for life.

#### Heater battery

Air heater with AL fins and staggered copper ducting heats the outside air to the specified setpoint temperature. Controlled by connecting a hydraulic unit (accessories) via the integrated control board.

There is a continuous adjustment between the specification and the temperature measured by the room or duct sensor (ALB-ASD included in delivery). A frost protection control is integrated as standard. Max. operating pressure 1.6 MPa. Water connection pipe with male thread.

400

165

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#### Electrical connection

Large terminal box protected to IP 20 on outside of casing.

#### Motor protection

Through thermal contact wired in series with the motor windings. Once the unit has cooled down, automatic reconnection takes place.

#### Sound levels

The table below also contains the sound pressure levels at 1 m (free field conditions). If necessary, cross talk attenuators are available (accessory) for further acoustic reduction.

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#### Control

The remote control is included in delivery and offers:

#### 5-step operation.

- Temperature control with connection from room and/or duct temperature sensor (included in delivery).
- Anti-freeze protection.
- Control of the hydraulic unit (accessory) for regulation of the WW-heater battery. Specification of min./ max. temperature.
- Operation of the extract air control ALB-ASD (accessories) for speed control of the extract fans.
- Indication of surrounding temperature, fan speed and filter contamination (via differential pressure switch, accessory).

### Further inputs and outputs: Automatic control of operation

- by means of week timer.
- Input for air quality or humidity sensor.
- Output for e.g. damper control.



Remote control with connection cable (10 m) included in delivery.

Туре	Ref. no.	Air flow volume* free discharge	Max. R.P.M.	Sound pres case breakout	ssure level supply air noise	Voltage 50 Hz	Power consumption Motor Heating		Current max. total	Wiring diagram	Maximum su for op with heating	Maximum supply air temp. for operation with heating w/o heating	
		♡ m³/h (max.)	min <sup>-1</sup>	dB(A) at 1 m	dB(A) at 1 m	Volt	kW	kW	А	No.	+°C	+°C	kg
ALB 280/4/60/35 WW	6501	4700	1450	57	74	400, 3N~	1.56	—	2.75	1122	20	40	110

\* with standard filter, class G 4

#### ALB 280/4/60/35 WW



Other accessories	Page	Room sensors	Page
Attenuator	434	Co <sub>2</sub> and humidity sensor	87 on
Details Hydraulic unit	432		
Flexible ducting,		Duct sensor for measuring	g the
grilles, moulded parts		Co <sub>2</sub> concentration or roon	n air
shutters	487 on	humidity in air ducts	
Supply air valves	510	upon i	request

- Heat output WW heater ①-③ Diagrams ①-③ show the heat output in relation to the flow/return and outdoor temperature over air flow volume.
- Water quantity WW heater ④ ④ shows the water flow in relation to the flow/return and outdoor temperature over air flow volume.
- Pressure loss WW heater (5) (5) shows the water pressure loss kPa over the water flow.







#### (5) Water pressure loss at 70/50 °C<sup>1)</sup>

© mun	<b>P</b>	10000	1010	000		0/ 0		•	
l/s	Т			Π					
0.35	+		$\vdash$	$\left  \right $	+	$\left  \right $	-		-
0.3	+			$\square$	-		<b>1</b>	1	
0.25	F			H	$\mathbf{k}$	Π			
0.2	F			И	-	$\square$			
0.15	F		H	$\square$	-	H	+		
0.1	F			$\square$	-				
0.05	F			H	-	$\square$			
0	F			Ц				T	
	0	1	2	3		4	5	6	7
			1	vate	er pi	ress	sure	IOSS	з кРа

#### Accessories Hydraulic unit

### WHSH HE 24 V (0-10 V) No. 8318

For regulation of the heat output of the water heater battery in connection with room/ duct sensor. Including flow/return temperature display, pump, servo motor, mixing valve, ball valve with integrated non-return valve, thermal casing and flexible connection hose.

#### Spare and pollen filters

Large surface pocket or cassette filters for long cleaning intervals, VDI 6022, DIN EN 779 compliant. Contents = 3 pcs. – Filter class G4

ELF-ALB 280/4/60/35 G4 No. 3649 - Filter class M5

ELF-ALB 280/4/60/35 M5 No.3650

- Filter class F7 ELF-ALB 280/4/60/35 F7 No. 3654

#### Differential pressure switch

Type DDSRef. no. 0445Adjustable opener/closer for moni-<br/>toring pressure loss.

Connection cable (extra long) – 30 metres long Type ALB-SK 30 Ref. no. 2517 – 50 metres long Type ALB-SK 50 Ref. no. 2518

Connection between ALB and remote control and between ALB and ALB-ASD.

#### Adaptor – symmetrical

From device flange to circular ducting.

ALB-ÜS 280/4/60/35 No. 7516 Flexible sleeve

For acoustic decoupling, incl. 2 hose clamps. **Type FM 355** Ref. no. 1675 **Coupling flange ring** made from galvanised sheet steel for connection to ducting.

Type FR 355 Ref. no. 1205

#### Extract air control

ALB-ASD 280/4/60/35 No. 3656 Control unit incl. duct temperature sensor for regulating an extract air fan in relation to the speed of the supply air fan.

Allows synchronised operation of the unit (supply and extract air) at five speed steps.

The control unit is connected with the supply systems by a control cable. The programming takes place in a few steps directly to the ALB-remote control

ALB-ASD is mountable in any position and allows the connection of one or many speed controllable 3 ph. fans up to nominal load.

#### Technical data

Voltage	400 V 3~, 50 Hz
Current max.	5 A
Protection class	IP 55
Dim. mm	W 390 x H 470 x D 135
Weight approx.	19.0 kg
Wiring diagram no	. 1126











The "All-rounder" with huge talent: GigaBox from Helios.



GigaBoxes are truly multifunctional talents which offer almost limitless flexibility in a number of different areas of application.

Compact frame construction and easy-to-install accessories facilitate variable and therefore optimal adjustment to the structural conditions thanks to the simple implementation of the casing panels. With five or (in the T120 series) three possible exhaust directions, you are free to choose where you want to install and how you want to position the fan. The GigaBoxes are ideally suited to conveying medium to large air flow volumes against high resistances in all kinds of ventilation systems. GigaBoxes from Helios are delivered as standard with the following items:

- Shaped piece on the exhaust side from square to round for low-loss discharge,
- Flexible sleeves to prevent structure-borne sound and for connection to ducts with common standard diameters.

#### GIGABOX T120 UP TO MAX. 120 °C



The GB T120 range is predestined to convey contaminated, hot air up to a maximum of 120 °C.

- Motor lies outside the flow line.
- Heat-insulated partition wall between the motor and impeller.
- Easy-to-access motor impeller unit.

Whenever high air flow temperatures or a large moisture content or steam is present in the exhaust air, the GigaBox T120 is ideal to use in exhaust air systems for process technology or in commercial kitchens.







GIGABOX **CENTRIFUGAL FANS** Product-specific information and selection chart



Standard AC types Ø 250 – 710 mm  $\forall = 1420 - 20280 \text{ m}^3/\text{h}$ 

Available in T120 version up to max. 120 °C



MEGABOX **CENTRIFUGAL FANS** Product-specific information and selection chart



on

Standard AC types Ø 160 – 400 mm  $V = 960 - 7500 \text{ m}^3/\text{h}$ 

248<sup>on</sup> 275<sup>on</sup>



**FRESH AIR BOXES** with electric or warm water heating and air filter

Box ans



Information Page Information for planning, acoustics 10 on General techn. information, speed control 15 on

#### Application

Multifunctional fan box, suitable for medium to higher air flow volumes against high resistances in every type of ventilation system. The compact frame construction offers easy conversion of the outlet position, together with a choice of ideal accessories make these units ideal for all applications.

#### GB T120

The GigaBox T120 types are suitable for the extraction of dirty, humid and hot air up to max. 120 °C, such as extract air fan in commercial kitchens and many process technology applications.

#### GB EC

GigaBox types with EC motor technology are available for energy-saving application and lowest operating costs.

#### Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool.

Intake cone for ideal airflow, spigot and flexible connector for duct connection. With outlet adapter (from rectangular to circular) on the exhaust side for low-loss discharge and flexible connector to reduce vibration transmission.

The flexible connectors are supplied as standard and correspond to the max. permissible air flow temperature of +70 °C and/or +120 °C with the types GB T120. Easy positioning with crane hooks as standard.

With GB T120, the motor is located outside of the air flow. The thermally insulated partition panel is also the support plate for the motor and impeller unit and can be removed completely for inspection without removing the complete fan from the system.

### Speed control GB and GB T120

All types (except GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120) are speed controllable by voltage reduction using a 5-step transformer controller or an electronic controller. The 3phase GB types can also be 2 speed controlled by Y/∆ switch (accessories DS 2 or full motor protection device M4). The performances stages are specified in the performance curve. 3-phase models are controllable by means of frequency inverter with Sine filter (FU-BS, accessories); GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120 only controllable by frequency inverter FU-BS.

#### 🗆 GB EC

All EC types are steplessly speed-controllable by means of speed-potentiometer. Furthermore, control is also possible by means of three-step switch or steplessly via a universal control system or electronic differential pressure/ temperature controller. The example performances stages are specified in the performance curve.

### Assembly, Installation GB and GB EC

Installation in any position and flexible assembly using the five possible discharge directions via the discharge adapter. Removable panels allow inspection access on all sides.

#### 🗆 GB T120

Installation must be carried out with downward condensation discharge. Flexible assembly through three possible centrifugal discharge directions via the discharge adapter. Easy-access inspection cover with handle, for cleaning and maintenance. Easy positioning of all types with integrated crane hooks. Vibration transmission to the building is minimised with anti-vibration mounts (Type SDD-U, accessories). Vibration transmission to the ducting is prevented using the standard flexible connector supplied.

#### Impeller

Free-running high-performance centrifugal impeller with backward curved polymer blades (NG 250 made from steel) on a galvanised steel back plate, direct driven. Series GB EC, GB from NG 500 and GB T120 with aluminium impellers. Energy-efficient with low noise generation. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3 or 2.5.

#### Motor

GB and GB T120 IEC-standard motor or maintenance-free external rotor motor protected to IP 54 or 44. Thermal overload protection through built-in thermal contacts. Suitable for continuous operation S1. Insulation class F. Ball bearings are lubricated for life.

#### GB EC

Energy-saving, speed-controllable EC external rotor motor protected to IP 54 with high level of efficiency. Maintenancefree and interference-free, ball bearing mounted.

### Electrical connection GB and GB T120

Standard terminal box, protected to IP 54.

GB EC

Standard terminal box (IP 54) mounted to running cable.

#### Air flow direction

The air flow direction of centrifugal fans is not reversible, but can be set by positioning the fan to the required air flow direction. Furthermore the position can be set individually to constructional conditions through the conversion of the discharge adapter and panels. The correct motor rotation direction is marked by rotation arrows on the motor and must be checked at startup.

Incorrect direction of rotation If the fan is operated in the incorrect direction of rotation, the motor will overheat and the thermal contact will trip. A typical indication of this is a very low air flow combined with high noise levels and vibration.

#### Air flow temperature

The maximum permitted air flow temperature is specified in the type table.

■ Ambient temperature From -40 °C to +40 °C.



VDI 2052 (2006) "Ventilation equipment for kitchens – Planning, design, inspection" is applied when planning exhaust air systems in commercial kitchens. This means the following for exhaust air fans:

□ Fans in exhaust air systems must be designed and fitted so that they are easy to access, easy to control and easy to clean. It must be possible to turn them off from inside the kitchen. The motors must be located outside the flow line of the exhaust air. Connected extractor hoods must be able to distinguish between solid and liquid components where possible. Passage of flame to the following components is to be prevented.

These specific requirements are excellently fulfilled in the Gigabox GB T120. Freely accessible casing and dual-wall side panels allow easy cleaning with degreasing agents and steam.

The guidelines on fire safety requirements for ventilation systems (LüAR) from September 2006 have been introduced across large areas of Germany.

This places the following additional requirements on exhaust air systems in commercial and comparable kitchens:

- Exhaust air ducts must be made of non-flammable components (building material class A1 or A2 according to DIN 4102). From the kitchen outlet, they have to have at least a fire resistance class of L90 or must be equipped with a shut-off device with proof of use for this purpose.
- Kitchen exhaust air ducts must not be connected to one another or to other ventilation ducts. Having a joint line for the room air and the kitchen exhaust within the kitchen and the connection of multiple extractor hoods in a kitchen to a shared exhaust line is permitted.
- □ Suitable grease filters or separating devices made of noncombustible materials are to be attached placed on or directly behind exhaust devices (hoods or ventilation ceilings). It must be possible to remove and reattach these easily for cleaning.

- The exhaust ducts must have smooth, easy-to-clean interior surfaces. Profiled walls, such as flexible ducts and porous or absorbent materials are not permitted. Neither fat nor condensate must be able to pass through the walls.
- ☐ The exhaust ducts must have a cleaning opening after every change of direction and in horizontal, straight sections at intervals of no more than 3 m. Their dimensions must have a duct cross-section of at least 3600 cm<sup>2</sup>. Devices must be placed at suitable locations in the ducting to collect and discharge condensate and cleaning agents.
- Fire protection to neighbouring buildings

If there is a ventilation system on the building envelope (wall), the parts of the ventilation system must have fire-resistant L90 lining. This also applies to fans and their exhaust lines, which are guided outwardly up through the roof.

### Fire protection in the roof space

Parts of the ventilation system (fan) in the roof space must have fire-resistant L90 lining. Lines that lead to the outdoors must have this lining up to the roof panels. Ventilation ducts (in the building and roof space) must have fire-resistant lining.







In the GigaBox T120 range, the motor is located outside the delivery flow and is separated from the impeller by a heat-insulated wall. The motor impeller unit can be removed without dismantling the ducting system.

Assembly of the shaped piece on exhaust side with GB T120 centrifugally above or at the side.

GB T120 with easy-to-remove access panel.



By combining the parameters of static pressure increase  $\Delta p_{\text{fa}},$  radiated noise and intake air noise as sound pressure at 4 m

(free field conditions), the following table facilitates the selection of GigaBox centrifugal fans.

	Sound press. case breakout	Sound press. intake	Air flow vo	flow volume V m <sup>3</sup> /h depending on static pressure											
Type GB EC	L <sub>PA</sub> dB(A)	L <sub>PA</sub> dB(A)	$(\Delta P_{fa})$ in F	Pa											
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW EC 250	31	43	2010	1880	1750	1600	1360	1010							
GBW EC 315	32	44	2620	2460	2310	2130	1830	1500							
GBW EC 355	30	49	3440	3270	3120	2950	2740	2500	2135	1630					
GBW EC 400 A	36	48	4050	3860	3600	3350	3050	2670	1880						
GBW EC 400 B	37	52	5160	4970	4730	4550	4210	4100	3800	3410	2900				
GBW EC 450	38	55	6460	6280	6100	5890	5660	5450	5190	4870	4600	3810			
GBD EC 450	39	56	7300	7120	6870	6650	6390	6110	5800	5500	5180	4420	3070		
GBD EC 500 A	43	55	8280	7980	7700	7380	7000	6620	6170	5680	5070	1800			
GBD EC 500 B	46	59	10500	10260	9980	9730	9410	9100	8850	8600	8320	7600	6650	5300	
GBD EC 560	49	59	13370	13110	12800	12510	12190	11930	11610	11280	10920	10310	9580	8320	6700
GBD EC 630	44	60	15000	14680	14200	13870	13450	12930	12380	11900	11310	10180	7850		
GBD EC 710 A	42	53	15890	15020	14250	13500	12510	11670	10680	9500	6730				
GBD EC 710 B	48	61	19630	19060	18400	16760	17130	16460	15720	15050	14060	11910	6960		

	Sound press. case breakout	Sound press. intake	Air flow vo	r flow volume Ým³/h depending on static pressure											
Type GB	LPA dB(A)	LPA dB(A)	$(\Delta P_{fa})$ in F	'a											
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW 250/4	27	39	1420	1160	890	500									
GBW 315/4	29	41	1760	1500	1260	970	560								
GBW 355/4	38	48	3060	2850	2640	2420	2180	1900	1510	560					
GBD 355/4/4	34	46	3090	2910	2720	2520	2290	2030	1680	1000					
GBW 400/4	38	50	4120	3920	3720	3500	3270	3000	2690	2260	1440				
GBD 400/4/4	38	50	4120	3910	3710	3500	3290	3050	2780	2430	1870				
GBW 450/4	40	49	4610	4400	4200	3990	3770	3530	3270	2970	2610				
GBD 450/4/4	40	52	5500	5220	4930	4640	4330	4000	3640	3210	2670				
GBW 500/4	47	59	8320	8020	7740	7460	7180	6910	6630	6340	6030	5330	4340	370	
GBD 500/4/4	45	57	8860	8540	8220	7880	7530	7160	6770	6350	5900	4800	2940	140	
GBW 560/4	45	57	9150	8910	8670	8420	8160	7890	7620	7330	7030	6360	5570	4500	2270
GBD 560/4/4	44	57	12610	12260	11910	11560	11200	10830	10450	10050	9630	8690	7540	5950	2940
GBD 560/6/6	35	48	8670	8160	7600	6990	6280	5410	4210	2190					
GBD 630/4/4	51	62	14430	14070	13710	13370	13040	12720	12390	12050	11710	11000	10200	9280	8110
GBD 630/6/6	42	53	9990	9430	8870	8290	7670	6980	6160	5070	3020				
GBD 710/4	46	59	20280	20020	19760	19490	19210	18930	18640	18340	18040	17400	16730	15990	15190
GBD 710/6/6	51	62	18740	17980	17190	16360	15490	14560	13550	12440	11170	7730	970		

	Sound press. case breakout	Sound press. intake	Air flow vo	ir flow volume Vm <sup>3</sup> /h depending on static pressure											
Type GB T120	L <sub>PA</sub> dB(A)	L <sub>PA</sub> dB(A)	$(\Delta P_{fa})$ in F	°a											
	at 4 m	at 4 m	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
GBW 355/4 T120	36	49	3460	2990	2460	1505									
GBD 355/4/4 T120	36	49	3470	3045	2510	1690									
GBW 400/4 T120	40	53	4930	4380	3790	2900	1580								
GBD 400/4/4 T120	40	53	4870	4295	3650	2740	1370								
GBW 450/4 T120	45	57	7110	6480	5850	5135	4350	3300	1900						
GBD 450/4/4 T120	45	57	7180	6600	5950	5220	4340	3230	1340						
GBW 500/4 T120	45	59	8345	7770	7160	6480	5670	4680	3510	1840					
GBD 500/4/4 T120	45	59	8350	7765	7490	7180	6600	5910	4970	3820	1920				
GBD 560/4/4 T120	48	62	12300	11690	11080	10475	9800	9120	8410	7430	6000				
GBD 630/4 T120	53	67	14140	13690	13200	12720	12230	11670	11150	10470	8830	7850	6820	5150	
GBD 710/4 T120	55	66	18200	17650	17200	16650	16000	15300	14500	13750	12800	11850	10850	9800	8500



### Arbitrary installation position and assembly in five possible discharge directions.

GBW EC 250











### SpecificationCasing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

#### □ Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

#### Electrical connection Standard terminal box (IP 54) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall

Saving

bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvres (accessories).

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

Anti vibration mou	nts for installa-
tion indoors. 1 set =	4 pcs.
SDD-U	Ref. no. 5627

Wall bracket for wall mounting.GB-WK 250Ref. no. 5625

External weather louvre to cover exhaust opening.

GB-WSG 250 Ref. no. 5637

Outdoor cover hood for protected outdoor installation. GB-WSD 250 Ref. no. 5746

Condensate collector with condensate spigot (centre) for pipe connection.

GB-KW 250 Ref. no. 5642

Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Univ control	versal system	flu	Speed-pot Jsh	entiometer surfa	ace
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Single phase	e motor, 1~	, 230 V, 50/6	i0 Hz, EC mo	tor, protectio	on to IP 54											
GBW EC 250	5807	250	2010	1650	31	0.17	1.05	973	55	20.0	EUR EC	) <sup>2)</sup> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fa	ins can norm	ally be conned	cted 2) alterna	tive electroni	c differential pr	essure/temp.	controller (ED	R/ETR, No. 14	437/1438) or t	hree-step	speed swi	tch (SU/SA	, No. 4266	/4267), see	accessorie	es









### Specification Casing

GB EC

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather lou-

<u>Saving</u>

with speed control

#### Sound levels

vres (accessories).

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
   Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

Anti vibration mounts for installa-<br/>tion indoors. 1 set = 4 pcs.SDD-URef. no. 5627Wall bracket for wall mounting.GB-WK 315Ref. no. 5625

External weather louvre to cover exhaust opening. GB-WSG 315 Ref. no. 5638

#### Outdoor cover hood for protected outdoor installation. GB-WSD 315 Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection. GB-KW 315 Ref. no. 5643

Accessory details Page Universal control system, electronic controller, speed-potentiometer 539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Uni contro	versal I system	flu	Speed-pot ish	entiometer surf	ace
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Single phas	e motor, 1~	, 230 V, 50/6	0 Hz, EC mot	tor, protectio	on to IP 54											
GBW EC 315	<b>5</b> 5808	315	2620	1500	32	0.20	1.25	973	55	31.0	EUR EC	<b>1) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fa	ans can norm	ally be conned	cted 2) alterna	tive electroni	c differential pr	ressure/temp.	controller (ED	R/ETR, No. 14	437/1438) or t	hree-step	speed sw	itch (SU/SA	, No. 4266	/4267), see	accessori	es

#### 240



1k

66

Axial disch

both sides,

2k

® Centrif. disch. (2) 8 V Centrifugal on 3 6 V

free discharge (5)

3000

18

Lp dB(A) SFP kW/m<sup>3</sup>/s

0,25

0.17

0.11

0.08

48

63 58 51

4 4 V

 $\rho = 1,20 \text{ kg/n}$ 

10 V

2 V

V m³/h

250 500

44 39 42 41 38 29

63

2000

ΡW

140

64

34

Free discharge

IA

1,40

0.87

0.45

0.26

65 62 59

64 68

125

45 50

49

52



**GBW EC 355** 

∆p<sub>fa</sub> Pa

400

300

200

100

0 -

Ω

Voltage V

Frequency

L<sub>WA</sub> Intake

L<sub>WA</sub> Exhaus

L<sub>WA</sub> Case breakout dB(A)

3

(4)

1000

n min-1

1500

1250

930

710

Saving

with speed control

**Ý** m³/h

3440

2870

2140

1630

Hz

dB(A)

dB(A)







free discharge



Dim. in mm

#### Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced toaether with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

#### Electrical connection Standard terminal box (IP 54) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall

bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvres (accessories).

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

Anti vibration m tion indoors. 1 se	ounts for installa- t = 4 pcs.								
SDD-U Ref. no. 5627									
Wall bracket for	wall mounting.								
GB-WK 355 Ref. no. 5625									
External weathe	<b>r louvre</b> to cover								

External weather louvre to cover exhaust opening. **GB-WSG 355** Ref. no. 5638

Outdoor cover hood for protected outdoor installation. **GB-WSD 355** Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection.

**GB-KW 355** Ref. no. 5643

Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Uni contro	versal I system	flu	Speed-pot Ish	entiometer surfa	ace
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Single phase	Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54															
GBW EC 355	5809	355	3440	1500	30	0.35	2.10	973	50	33.0	EUR EC	<b>1) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories																

EC box fans









# Specification Casing

GB EC

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Impeller and remaining design see description on page 241.

#### Accessories

Anti vibration mountsfor installa-tion indoors. 1 set = 4 pcs.SDD-URef. no. 5627

Wall bracket for wall mounting.GB-WK 400Ref. no. 5626

**External weather louvre** to cover exhaust opening.

**GB-WSG 400** Ref. no. 5639

Outdoor cover hood for protected outdoor installation. GB-WSD 400 Ref. no. 5748

Condensate collector with con-<br/>densate spigot (centre) for pipe<br/>connection.GB-KW 400Ref. no. 5644

### GBW EC 400 B



Voltage V	n min-1	℣ m³/h	ΡW	IA	Lp dB(A)	SFP kW/m <sup>3</sup> /s
10	1500	5160	395	2,52	37	0,28
8	1250	4300	244	1,63	34	0,21
6	930	3200	117	0,85	29	0,13
4	710	2440	63	0,49	25	0,09



Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Univ contro	versal I system	Speed-po flush		entiometer surfa	ace
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Single phase	Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54															
GBW EC 400	<b>A</b> 5817	400	4050	1200	36	0.35	2.00	973	50	43.0	EUR EC	<b>1) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
GBW EC 400	<b>B</b> 5810	400	5160	1500	37	0.62	3.70	976	50	46.0	EUR EC	1) 2) 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1)								B (FTB 1)						(1007)		

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories









 Centrifugal on both sides, free discharge



### Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Impeller and remaining design see description on page 241.

#### Accessories

Anti vibration mountsfor installa-tion indoors. 1 set = 4 pcs.SDD-URef. no. 5627

Wall bracket for wall mounting.GB-WK 450Ref. no. 5626

External weather louvre to cover exhaust opening.

**GB-WSG 450** Ref. no. 5639

Outdoor cover hood for protected outdoor installation. GB-WSD 450 Ref. no. 5748

Condensate collector with con-<br/>densate spigot (centre) for pipe<br/>connection.GB-KW 450Ref. no. 5644



#### GBD EC 450



Voltage V	n min-1	℣ m³/h	PW	IA	Lp dB(A)	SFP kW/m3/s		
10	1500	7320	640	1,20	39	0,31		
8	1250	6030	380	0,80	36	0,23		
6	930	4510	170	0,45	31	0,14		
4	710	3420	90	0,27	28	0,10		



Accessory details	Pa	ige
Universal control system,		
electronic controller,		
speed-potentiometer	539	on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Univ control	ersal system	flu	Speed-pot sh	entiometer surfa	ace
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Single phase motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 54																
GBW EC 450	5811	450	6460	1450	38	1.00	5.70	976	50	55.0	EUR EC <sup>1</sup>	) <sup>2)</sup> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
Three phase	Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54															
GBD EC 450	5812	450	7320	1500	39	1.00	1.80	976	55	52.0	EUR EC <sup>1</sup>	) <sup>2)</sup> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fa	ins can norm	ally be conned	cted 2) alterna	tive electronic	c differential pr	essure/temp.	controller (ED	R/ETR, No. 1-	437/1438) or t	hree-step	speed swit	tch (SU/SA	, No. 4266/	4267), see	accessorie	es



2k 45 4k

39

66 59

8k

31



B Centrif, disch

Centrifugal on

free discharge

both sides.







#### Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Impeller and remaining design see description on adjacent page.

#### Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcs. SDD-U Ref. no. 5627

Wall bracket for wall mounting. **GB-WK 500** Ref. no. 5626

External weather louvre to cover exhaust opening.

GB-WSG EC500 Ref. no. 5640

Outdoor cover hood for protected outdoor installation. GB-WSD EC500 Ref. no. 5749

Condensate collector with condensate spigot (centre) for pipe connection. **GB-KW EC500** Ref. no. 5645



300

170

0,60

0.40



4

930

710

6450

4860

Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on

0,17

0.13

38

34

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Univ control	rersal system	Speed-po flush		Speed-potentiometer flush surfa	
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Three phase	Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54															
GBD EC 500 /	<b>A</b> 5818	500	8280	1200	43	1.10	1.80	976	50	80.5	EUR EC	<b>) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
GBD EC 500 I	<b>B</b> 5813	500	10500	1500	46	1.95	3.10	976	50	79.0	EUR EC	<b>) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
					-											

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories



Arbitrary installation position and assembly in five possible discharge directions.

GBD EC 560











### Specification

#### Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 2.5.

#### Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

#### Electrical connection Standard terminal box (IP 54) is

mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall

Saving

with speed control

bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvres (accessories).

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

Anti vibration mo tion indoors. 1 set	<b>bunts</b> for installa- t = 4 pcs.								
SDD-U	Ref. no. 5627								
Wall bracket for wall mounting.									
GB-WK 560	Ref. no. 5626								
External weather louvre to cover									

External weather louvre to cover exhaust opening. GB-WSG 560 Ref. no. 5640

Outdoor cover hood for protected outdoor installation. GB-WSD 560 Ref. no. 5749

**Condensate collector** with condensate spigot (centre) for pipe connection.

GB-KW 560 Ref. no. 5645

Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiomete flush su		entiometer surfa	ice
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Three phase	motor, 3~	, 400 V, 50/6	0 Hz, EC mot	or, protectio	n to IP 54											
GBD EC 560	5814	560	13370	1400	49	2.80	4.30	976	50	83.0	EUR EC	<b>) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fa	1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories													S		











GB EC

#### Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks

#### Impeller

Free-running backward curved centrifugal impeller from aluminium, direct driven. Energy efficient with a low noise development. Dynamically balanced toaether with the motor to DIN ISO 1940 Pt.1 - class 2.5.

#### Motor

Energy saving, speed controllable EC-external rotor motors with highest efficiency, protection to IP 54. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 54) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC motor and electronics.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Installation

vres (accessories).

Sound levels

are given for:

Sound level intake

Sound level exhaust

(free field conditions).

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather lou-

Total sound power levels and

the spectrum figures in dB(A)

In the table below as well as un-

derneath the performance curve

you can find additionally the

sound pressure levels at 4 m

Sound level case breakout

#### Accessories

Anti vibration mounts for installation indoors. 1 set = 4 pcsSDD-U Ref. no. 5627

External weather louvre to cover exhaust opening GB-WSG EC630 Ref. no. 5641

Outdoor cover hood for protected outdoor installation. GB-WSD EC630 Ref. no. 5750

Condensate collector with condensate spigot (centre) for pipe connection. GB-KW EC630

Ref. no. 5646

Accessory details Page Universal control system, electronic controller. speed-potentiometer 539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system		Speed-potentiometer flush sur		face	
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54																
GBD EC 630	5815	630	15000	1100	44	2.30	3.70	976	50	116.0	EUR EC	<b>1) 2)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fa	ans can norm	ally be conned	cted 2) alterna	tive electroni	c differential pr	ressure/temp.	controller (ED	R/ETR, No. 14	437/1438) or t	hree-step	speed sv	vitch (SU/SA	, No. 4266	i/4267), see	e accessori	es



Arbitrary installation position and assembly in five possible discharge directions.





 Centrifugal on both sides, free discharge



### Specification

#### Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Туре

Impeller and remaining design see description on adjacent page.

Ref. no.

#### Accessories

Anti vibration mountsfor installa-tion indoors. 1 set = 4 pcs.SDD-URef. no. 5627

External weather louvre to cover exhaust opening. GB-WSG 710 Ref. no. 5641

Outdoor cover hood for protected outdoor installation. GB-WSD 710 Ref. no. 5750

Condensate collector with condensate spigot (centre) for pipe connection. GB-KW 710 Ref. no. 5646

Accessory details	Page
Universal control system,	
electronic controller,	
speed-potentiometer	539 on



#### GBD EC 710 B



Voltage V	n min-1	V m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	940	19650	1700	2,70	48	0,31
8	750	15690	904	1,50	43	0,21
6	550	11420	393	0,80	36	0,12
4	330	6800	97	0,20	26	0,05



Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max. air flow temperature	Weight net approx.	Universal control system	Speed-pot flush	entiometer surface

			(FID)		breakout					approx.						
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Three phase mo	Three phase motor, 3~, 400 V, 50/60 Hz, EC motor, protection to IP 54															
GBD EC 710 A	5816	710	15890	775	42	1.50	2.40	976	50	119.0	EUR EC <sup>1) 2</sup>	<b>)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
GBD EC 710 B	5819	710	19650	940	48	2.65	4.10	976	50	100.0	EUR EC <sup>1) 2</sup>	<b>)</b> 1347	PU 24 <sup>1)</sup>	1736	PA 24 <sup>1)</sup>	1737
1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed switch (SU/SA, No. 4266/4267), see accessories													S			







# Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running high-performance centrifugal fan made from steel with backward curved blades on a galvanised steel plate, direct driven. Energy efficient with low noise development. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3.

#### Motor

400

Through maintenance-free, speed controllable external rotor motor protected to IP 44. Ball bearing mounted, interference-free.

Dim. in mm

#### Electrical connection

Standard terminal box (IP 54) on motor.

#### Motor protection

Through built-in thermal contacts wired in series with the winding, switches off and on automatically after cooling.

#### Speed control

Through voltage reduction by means of 5-step transformer or electronic speed controller. The performance stages are specified in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvres (accessories).

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
   Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

Anti vibration mounts for installa-<br/>tion indoors. 1 set = 4 pcs.SDD-URef. no. 5627Wall bracket for wall mounting.GB-WK 250Ref. no. 5625External weather louvre to cover<br/>exhaust opening.GB-WSG 250Ref. no. 5637Outdoor cover hood for protect-

#### ed outdoor installation. **GB-WSD 250** Ref. no. 5746

**Condensate collector** with condensate spigot (centre) for pipe connection.

<b>GB-KW</b>	250	Ref. no.	5642

Information	Page
Information for planning General techn. informatio	10 on n,
speed control	15 on
Accessory-Details	Page
Speed switch, controller	525 on

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power	Cui full load	rrent controlled	Wiring diagram	max. a tempera full load	max. air flow Weigh temperature at net ull load control. appro>		5-step transformer-speed switch without full motor protection		
		∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	
Single phase	e motor, 1~	, 230 V, 50 H	lz, capacitor	motor, prote	ction to IP 4	4								
GBW 250/4	5509	1500	1290	27	0.11	0.44	0.48	864	65	65	20.0	TSW 1,5	1495	





GB





Centrifugal on both sides. free discharge



#### Specification Casing

Self-supporting frame construction made from hollow aluminium profiles. Lined with 20 mm thick double-walled side panels made from galvanised sheet steel, sound and thermally insulated with flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning with standard crane hooks.

#### Impeller

Free-running high-performance centrifugal fan made from steel with backward curved blades on a galvanised steel plate, direct driven. Energy efficient with low noise development. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 - grade 6.3.

#### Motor

Through maintenance-free, speed controllable external rotor motor protected to IP 44. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 54) on motor.

#### Motor protection

Through built-in thermal contacts wired in series with the winding, switches off and on automatically after cooling.

#### Speed control

Through voltage reduction by means of 5-step transformer or electronic speed controller. The performance stages are specified in the performance curve.

#### Installation

Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) has to be used. Outdoor installation is possible using outdoor cover hood and external weather louvres (accessories).

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### Accessories

tio

Anti vibration mounts for installa-													
tion indoors. 1 se	et = 4 pcs.												
SDD-U	Ref. no. 5627												
Wall bracket for	wall mounting.												
GB-WK 315	Ref. no. 5625												
External weather	er louvre to cover												
GB-WSG 315	Ref. no. 5638												
<b>.</b>													

Outdoor cover hood for protected outdoor installation. **GB-WSD 315** Ref. no. 5747

Condensate collector with condensate spigot (centre) for pipe connection.

**GB-KW 315** Ref. no. 5643

Information	Page
Information for planning General techn. informatio speed control	10 on n, 15 on
Accessory-Details	Page
Speed switch, controller	525 on

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power	Cur full load	rrent controlled	Wiring diagram	max. a tempera full load	ir flow ature at control.	Weight net approx.	5-step transfo switch v full motor p	ormer-speed without protection	
		∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	
Single phas	e motor, 1~	, 230 V, 50 H	lz, capacitor	motor, prote	ction to IP 4	4								
GBW 315/4	5510	1760	1230	29	0,123	0,55	0,55	864	55	55	31,0	TSW 1,5	1495	





Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







· Centrifugal on both sides. free discharge







View from below

145

Dimensions in mm

Drain

145

Centrifugal on both sides, free discharge



- Special features of types **GB T120**
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

□ Assembly of types GB Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

#### Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30

150

Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Туре	Ret. no.	Air flow	R.P.M.	Sound press.	Motor	full	rrent speed	Wiring	Maximun	n air flow erature	Weight (net)	5 ste	p transfor th	mer contro witho	ller	Full moto	r protection sing the
		(FID)		breakout	(nominal)	load	controlled	ulugium	Full load	controlled	kg	mot. pro	tect. unit	mot. prote	ect. unit	therma	l contacts
		∀m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Type R	ef. no.	Туре	Ref. no.
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 355/4	5511	3060	1375	38	0.29	1.47	1.90	864	60	60	32.0	MWS 3	1948	TSW 3,0	1496	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase I	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 355/4/4	5512	2850/3100	1230/1405	34	0.25/0.34	0.41/0.75	0.75	867	55	55	35.0	RDS 1	1314	TSD 1,5	1501	MD	5849
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 355/4 T120	5770	3460	1340	36	0.32	1.55	1.75	935	120	120	38.0	MWS 3	1948	TSW 3,0	1496	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase I	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 355/4/4 T12	<b>20</b> 5771	2990/3470	1100/1360	36	0.22/0.33	0.40/0.75	0.75	947	120	120	38.0	RDS 1	1314	TSD 0,8	1500	MD	5849
1) incl. operation swi	tch																







#### Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

#### Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake

(free field conditions).

 Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m



GBD 355/4/4 T120



#### Accessories of both types

Anti vibration mountsfor installa-<br/>tion indoors. Set of 4.SDD-URef. no. 5627

Wall bracket for wall mounting.GB-WK 355Ref. no. 5625

### External weather louvers to cover exhaust opening. GB-WSG 355 Ref. no. 5638

Outdoor cover hood for outdoor installation. GB-WSD 355 Ref. no. 5747

**On/Off and 2-speed switch** for 3-phase  $Y/\triangle$  motors.

#### Type DS 2<sup>2)</sup> Ref. no. 1351

<sup>2)</sup> full motor protection unit recommended: MD Ref. No. 5849

#### Specific accessories

#### for types GB

Condensate collector with condensate spigot for pipe connection.

#### GB-KW 355 Ref. no. 5643

(Condensate collector with condensate spigot included in delivery with GB T120).

#### ☐ for types GB T120

Rain drainagefor outdoor installa-tion (drill holes for rain drainage is<br/>already prepared).already prepared).GB-RARef. no. 9418

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Speed controller and full	
motor protection unit	525 on



Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







 Centrifugal on both sides, free discharge







Centrifugal on both sides, free discharge

View from below

180

Drair

<u>180</u>

Dim. in mm



- Special features of types GB T120
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

 Assembly of types GB
 Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.
 For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

# Specification of both typesCasing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

250

Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Туре	Ret. no.	Air flow volume	R.P.M.	Sound press. case	Motor	full	rrent speed	Wiring diagram	Maximun	n air flow rature	(net)	5 ste Wi	ep transfor ith	mer contro withou	ller It	Full moto unit u	r protection sing the
		(FID)		Dreakout	(nominal)	IUdu	controlled		Full load	controlled	кд	mot. pro	Diect. Unit	mot. prote	ct. unit	thermai	contacts
		V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Type R	ef. no.	Туре	Ref. no.
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 400/4	5513	4300	1360	38	0.53	2.40	2.80	864	50	50	52.0	MWS 5	1949	TSW 5,0	1497	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase I	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 400/4/4	5514	3700/4100	1193/1390	38	0.38/0.49	0.61/1.05	1.08	867	50	45	52.0	RDS 2	1315	TSD 1,5	1501	MD	5849
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 400/4 T120	5772	4930	1280	40	0.54	2.50	2.50	935	120	100	62.0	MWS 3	1948	TSW 3,0	1496	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase I	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 400/4/4 T12	<b>20</b> 5773	4010/4870	975/1255	40	0.29/0.48	0.50/1.10	1.10	947	120	120	62.0	RDS 1	1314	TSD 1,5	1501	MD	5849
1) incl. operation swi	tch																







#### Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

#### Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### GBD 400/4/4 Frequency Hz Total L<sub>WA</sub> Case breakout dB(A) 58



GBD 400/4/4 T120



#### Accessories of both types

Anti vibration mountsfor installa-<br/>tion indoors. Set of 4.SDD-URef. no. 5627

Wall bracket for wall mounting. GB-WK 400 Ref. no. 5626

### External weather louvers to cover exhaust opening. GB-WSG 400 Ref. no. 5639

Outdoor cover hood for outdoor installation. GB-WSD 400 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/△ motors. Type DS 2<sup>2)</sup> Ref. no. 1351

<sup>2)</sup> full motor protection unit recommended: MD Ref. No. 5849

#### Specific accessories

#### for types GB

Condensate collector with condensate spigot for pipe connection.

#### GB-KW 400 Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

#### for types GB T120

Rain drainagefor outdoor installa-tion (drill holes for rain drainage is<br/>already prepared).already prepared).GB-RARef. no. 9418

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Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







· Centrifugal on both sides. free discharge







Centrifugal on both sides, free discharge

View from below

<u>180</u>

Dim. in mm

180

Drair



- Special features of types **GB T120**
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

□ Assembly of types GB Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

#### Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30 250

> Smooth running backward curved centrifugal impeller highly efficient with polymer blades on galvanised steel disc (with GB T120 aluminium impeller), direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Туре	Ket. no.	Air flow volume	R.P.M.	Sound press. case	Motor	full	speed	Wiring diagram	Maximun	n air flow rature	(net)	5 step with	transfor	rmer contro withou	ller ut	Full moto unit u	r protection sing the
		(FID)		Dreakoul	(nominal)	IUdu	controlled		Full load	controlled	ку	mot. prote	ci. unii	mot. prote	ect. unit	inermai	contacts
		V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Type Re	f. no.	Type Re	ef. no.	Туре	Ref. no.
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 450/4	5515	4600	1380	40	0.66	2.90	4.0	864	45	45	49.0	MWS 5	1949	TSW 5,0	1497	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase i	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 450/4/4	5516	4350/5450	880/1240	40	0.36/0.67	0.67/1.33	1.30	867	55	55	49.0	RDS 2	1315	TSD 1,5	1501	MD	5849
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 450/4 T120	5774	7110	1370	45	1.00	4.60	5.50	935	120	100	74.0	MWS 7,5	1950	TSW 7,5	1596	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase I	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 450/4/4 T12	<b>0</b> 5775	6210/7180	1100/1350	45	0.65/0.90	1.10/1.60	1.80	947	120	110	74.0	RDS 2	1315	TSD 3,0	1502	MD	5849
1) incl. operation swi	tch																







#### Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

#### Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake

(free field conditions).

 Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m



GBD 450/4/4 T120



#### Accessories of both types

Anti vibration mountsfor installa-<br/>tion indoors. Set of 4.SDD-URef. no. 5627

Wall bracket for wall mounting.GB-WK 450Ref. no. 5626

### External weather louvers to cover exhaust opening. GB-WSG 450 Ref. no. 5639

Outdoor cover hood for outdoor installation. GB-WSD 450 Ref. no. 5748

**On/Off and 2-speed switch** for 3-phase  $Y/\triangle$  motors.

**Type DS 2**<sup>2</sup> Ref. no. 1351

2) full motor protection unit recommended: MD Ref. No. 5849 Specific accessories

#### for types GB

Condensate collector with condensate spigot for pipe connection.

#### **GB-KW 450** Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

#### ☐ for types GB T120

Rain drainagefor outdoor installa-tion (drill holes for rain drainage is<br/>already prepared).already prepared).GB-RARef. no. 9418

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Speed controller and full motor protection unit	525 on



Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







· Centrifugal on both sides. free discharge







View from below

180

Drair

<u>180</u>

Dim. in mm

Centrifugal on both sides, free discharge



- Special features of types **GB T120**
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

□ Assembly of types GB Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

#### Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30 250

> Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Туре	Ket. no.	Air flow volume (FID)	K.P.M.	Sound press. case breakout	power (nominal)	full load	rrent speed controlled	Wiring diagram	Maximun tempe Full load	n air flow rature controlled	weight (net) kg	5 ster wit mot. prof	o transfor h tect. unit	mer contro witho mot. prot	ut ect. unit	unit u therma	or protection Ising the I contacts
		♡m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Type	Ref. no.	Type F	Ref. no.	Туре	Ref. no.
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 500/4	5517	8321	1401	47	1.50	6.70	9.60	865	65	55	61	<b>MWS 10</b>	1946	<b>TSW 10</b>	1498	MW <sup>1)</sup>	1579
2 speed motor, 3	Phase	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 500/4/4	5518	8000/9200	1075/1340	45	0.97/1.45	1.60/2.80	2.90	867	50	50	57	RDS 7	1578	TSD 5,5	1503	MD	5849
1 Phase motor, 2	30 V / 1	ph. / 50 Hz	z, capacitor	motor, protec	ction to IP 54	4											
GBW 500/4 T120	5776	8345	1340	45	1.40	6.1	7.0	301	120	100	75	<b>MWS 10</b>	1946	_	-		_
2 speed motor, 3	Phase	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 500/4/4 T12	<b>20</b> 5777	7320/8350	1120/1370	45	0.95/1.30	1.60/2.50	2.5	947	120	110	75	RDS 4	1316	TSD 3,0	1502	MD	5849
1) incl. operation sw	itch																





GBW 500/4 T120 
 Total
 125
 250
 500
 1k
 2k

 65
 54
 61
 58
 57
 56

 79
 65
 71
 73
 72
 73
 Hz 4k 8k Frequency L<sub>WA</sub> Case breakout dB(A) 50 42 72 77 L<sub>WA</sub> Intake ∆p<sub>fa</sub> Pa dB(A) 68 58 66 74 75 76 60 Lwa Exhaust dB(A) 68 ® Centrif. disch. (1) 230 V 800 -Centrifugal on 2 170 V 80 both sides, 3 130 V free discharge ④ 100 V 600 79 (5) 80 V R 400 79 200 82 Vm³/h 0 0 2000 4000 6000 8000

#### Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve
   You can find additionally the
  - derneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).



GBD 500/4/4 T120



#### Accessories of both types

Anti vibration mountsfor installa-<br/>tion indoors. Set of 4.SDD-URef. no. 5627

Wall bracket for wall mounting.GB-WK 500Ref. no. 5626

External weather louvers to cover exhaust opening. GB-WSG 500 Ref. no. 5639

Outdoor cover hood for outdoor installation. GB-WSD 500 Ref. no. 5748

On/Off and 2-speed switch for 3-phase Y/△ motors. Type DS 2<sup>2)</sup> Ref. no. 1351

<sup>2)</sup> full motor protection unit recommended: MD Ref. No. 5849 Specific accessories

#### for types GB

Condensate collector with condensate spigot for pipe connection.

#### GB-KW 500 Ref. no. 5644

(Condensate collector with condensate spigot included in delivery with GB T120).

#### ☐ for types GB T120

Rain drainage for outdoor installa-<br/>tion (drill holes for rain drainage is<br/>already prepared).GB-RARef. no. 9418

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Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







· Centrifugal on both sides. free discharge







View from below

<u>2</u>25

Dim. in mm

225

Drair

Centrifugal on both sides, free discharge



- Special features of types **GB T120**
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

□ Assembly of types GB Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

80r

#### Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30

250

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Туре	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Cur Full Ioad	rent speed controlled	Wiring diagram	Maximur tempe Full load	n air flow rature controlled	Weight (net) kg	5 ste wi mot. pro	p transfor th tect. unit	mer cont with mot. pro	roller out otect. unit	Full moto unit u therma	or protection using the I contacts
		𝔅 m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 Phase moto	r, 230 V / 1	l ph. / 50 Hz,	capacitor	motor, protec	ction to IP 54	1											
GBW 560/4	5508	9123	1409	45	1.83	7.93	10.4	867	45	45	92	MWS 1	<b>D</b> 1946	TSW 10	1498	MW <sup>1)</sup>	1579
2 speed moto	r, 3 Phase	motor, 400 V	/ 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 560/6/6	5522	7800/9000	705/885	35	0.51/0.80	0.90/1.85	1.90	867	60	60	80	RDS 4	1316	TSD 3,	<b>)</b> 1502	MD	5849
GBD 560/4/4	5521	11500/13000	1110/1350	44	1.70/2.60	2.80/4.80	4.90	867	55	45	90	RDS 7	1578	TSD 7,	<b>)</b> 1504	MD	5849
2 speed moto	r, 3 Phase	motor, 400 V	/ 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 560/4/4	<b>T120</b> 5778	11520/12300	1250/1400	48	1.85/2.50	3.20/6.80	6.80	520	120	120	105	RDS 7	1578	TSD 7,	<b>)</b> 1504	MD	5849

1) incl. operation switch







#### Motor protection

Motors have thermal contacts wired to the terminal block and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by star/delta switch (accessories DS 2 or full motor protection unit M 4). The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve
   you can find additionally the
  - demeath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).





#### Accessories of both types

Anti vibration mounts for installation indoors. Set of 4. SDD-U Ref. no. 5627

Wall bracket for wall mounting.GB-WK 560Ref. no. 5626

### External weather louvers to cover exhaust opening. GB-WSG 560 Ref. no. 5640

Outdoor cover hood for outdoor installation. GB-WSD 560 Ref. no. 5749

#### On/Off and 2-speed switch for

3-phase Y/∆ motors. **Type DS 2**<sup>2)</sup> Ref. no. 1351

<sup>2)</sup> full motor protection unit recommended: MD Ref. No. 5849

#### Specific accessories

#### for types GB

Condensate collector with condensate spigot for pipe connection.

#### GB-KW 560 Ref. no. 5645

(Condensate collector with condensate spigot included in delivery with GB T120).

#### ☐ for types GB T120

Rain drainagefor outdoor installa-tion (drill holes for rain drainage is<br/>already prepared).already prepared).GB-RARef. no. 9418

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Arbitrary installation position and flexible assembly by five possible discharge directions.

#### GB T120

Designed for moving dirty, humid and hot air up to max. 120° C. Motor located outside the air flow.







· Centrifugal on both sides. free discharge







View from below

<u>225</u>

Dim. in mm

225

Drain

Centrifugal on both sides, free discharge



- Special features of types **GB T120**
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

□ Assembly of types GB Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter. For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover

hood and external weather louvers (accessories).

80r

#### Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30

250

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 - class 6.3.

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54. With ball bearings and interference-free as standard.

Electrical connection

Standard terminal box (IP 54) fitted on the motor; with GB T120 fitted on the motor support plate.

Туре	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Cur full load	rrent speed controlled	Wiring diagram	Maximur tempe Full load	n air flow erature controlled	Weight (net) kg	5 ste wi mot. pro	p transfor th otect. unit	mer cont with mot. pr	roller 10ut 5tect. unit	Full moto unit u therma	r protection sing the I contacts
		∀ m³/h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
2 speed motor, 3 Phase motor, 400 V / 3 ph. / 50 Hz, Y/ $\bigtriangleup$ wiring, protection to IP 54																	
GBD 630/6/6	5524	8600/9990	723/893	42	0.64/0.93	1.08/1.88	2.03	867	60	60	86	RDS 4	1316	TSD 5,	<b>5</b> 1503	MD	5849
GBD 630/4/4	5523	12954/14430	1128/1383	51	2.40/3.45	4.10/6.20	7.20	867	75	50	105	RDS 11	1332	TSD 11	<b>,0</b> 1513	MD	5849
3 Phase motor, 3~, 400 V, 50 Hz, protection to IP 54																	
GBD 630/4 T120	5779	14200	1445	53	4.40	8.0		499	120	_	105	_		_		MD	5849





#### Motor protection

Types GBD with thermal contacts embedded on the terminal strip, which must be wired with the full motor protection device. Type GBD T120 with PTC thermistor for direct wiring with the full motor protection device or frequency inverter FU-BS (see table below, accessories).

#### Speed control

All types (except GB T120) are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by Y/△ switch or full motor protection unit M4; Type GBD T120 is exclusively controllable via frequency inverter with Sine filter. The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust
   In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).

#### GBD 630/4/4



#### Accessories of both types

Anti vibration mounts for installation indoors. Set of 4. SDD-U Ref. no. 5627

Wall bracket for wall mounting.GB-WK 630Ref. no. 5626

### External weather louvers to cover exhaust opening. GB-WSG 630 Ref. no. 5640

Outdoor cover hood for outdoor installation. GB-WSD 630 Ref. no. 5749 Specific accessories

#### for types GB

**Condensate collector** with condensate spigot for pipe connection.

Box

#### GB-KW 630 Ref. no. 5645

(Condensate collector with condensate spigot included in delivery with GB T120).

#### On/Off and 2-speed switch for

3-phase Y/△ motors.

IJ	/pe i	DS 2	''	Ret.	no.	13	ЪI

 full motor protection unit recommended: MD Ref. No. 5849

#### for types GB T120

Rain drainagefor outdoor installa-<br/>tion (drill holes for rain drainage is<br/>already prepared).GB-RARef. no. 9418

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- Special features of types GB T120
- Designed for moving dirty, humid and hot air volumes up to max. 120° C.
- Motor located outside of air flow.
- Temperature insulated partition panel between motor and impeller, lined with 20 mm thick, flame-retardant mineral wool.
- Easily accessible motor and impeller unit, removable without disassembling the system components.
- Inspection cover with handle, simply remove for cleaning and maintenance.
- Condensate collector with condensate spigot included in delivery. Drill hole for rain drainage (accessories) for outdoor installation is prepared.

#### Assembly GB T120

Installation must be carried out with condensation discharge showing downward. Flexible assembly by three possible centrifugal discharge directions via the discharge adapter. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

#### Feature

 Assembly of types GB
 Arbitrary installation position and flexible assembly by five possible discharge directions via the discharge adapter.
 For wall mounting the wall bracket (accessories) have to be used. Outdoor installation is possible using outdoor cover hood and external weather louvers (accessories).

30

1020

# Specification of both types Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal inflow as well as spigot and flexible sleeve (for the respective max. permissible air flow temperature) for duct connection. With discharge adapter (from square to circular) on the pressure side for low-loss discharge and flexible sleeve to reduce vibration transmission. Simple positioning by standard crane hooks.

#### Impeller

Condensation outlet

30

230

Smooth running backward curved aluminium centrifugal impeller highly efficient and direct driven. Energy efficient with a low noise development. Dynamically balanced together with the motor to DIN ISO 1940 Pt.1 – class 6.3.

View from below

315

Dim. in mm

236

Drain

#### Motor

Maintenance-free external rotor motor or IEC-standard motor protected to IP 54/55. With ball bearings and interference-free as standard.

#### Electrical connection

Standard terminal box (IP 54/55) fitted on the motor; with GB T120 fitted on the motor support plate.

Туре	Ref. no.	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power (nominal)	Cur full load	Current         Wiring         Maximum air flow         Weight         5 step transformer controller           full         speed         diagram         temperature         (net)         with         without           load         controlled         Full load         controlled         kg         mot. protect. unit         mot. protect.		g Maximum air flow Weight 5 step temperature (net) with Full load controlled kg mot. prote		Veight 5 step transf (net) with kg mot. protect. un		troller nout otect. unit	ler Full motor p it unit usir ct. unit thermal c			
		V m³∕h	min <sup>-1</sup>	dB(A) in 4 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
3 Phase motor, 3∼, 400 V, 50 Hz, Y/△ wiring, protection to IP 55																	
GBD 710/4	5529	20285	1465	51	5.97	10.20	—	499	70		170		_			MD	5849
2 speed mo	otor, 3 Phase	motor, 400	V / 3 ph. / 5	0 Hz, Y/∆ wi	ring, protect	tion to IP 54											
GBD 710/6/	<b>/6</b> 5525	16500/19000	690/890	46	1.55/2.45	2.90/4.70	4.70	867	50	50	157	RDS 7	1578	TSD 7,	<b>0</b> 1504	MD	5849
3 Phase motor, 3~, 400 V, 50 Hz, protection to IP 54																	
GBD 710/4	<b>T120</b> 5756	18200	1465	55	5,89	10.4	_	499	120	—	188		_		_	MD	5849





GBD 710/4 T120



#### Motor protection

Types GBD with thermal contacts embedded on the terminal strip, which must be wired with the full motor protection device. Type GBD T120 with PTC thermistor for direct wiring with the full motor protection device or frequency inverter FU-BS (see table below, accessories).

#### Speed control

All types (except GB T120) are speed controllable by voltage reduction using a transformer controller. The 3-phase models can also be 2 speed controlled by Y/△ switch or full motor protection unit M4; Type GBD T120 is exclusively controllable via frequency inverter with Sine filter. The duties at different speeds are given in the performance curve.

#### Sound levels

- Total sound power levels and the spectrum figures in dB(A) are given for:
- Sound level case breakout
- Sound level intake
- Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure levels at 4 m (free field conditions).



Accessories of both types

Anti vibration mounts for installation indoors. Set of 4. SDD-U Ref. no. 5627

External weather louvers to cover exhaust opening. GB-WSG 710 Ref. no. 5641

Outdoor cover hood for outdoor installation. GB-WSD 710 Ref. no. 5750

#### Specific accessories

#### for types GB

**Condensate collector** with condensate spigot for pipe connection.

#### GB-KW 710 Ref. no. 5646

Box ans

(Condensate collector with condensate spigot included in delivery with GB T120).

#### On/Off and 2-speed switch for

3-phase Y/△ motors.

#### Type DS 2<sup>1)</sup> Ref. no. 1351

 full motor protection unit recommended: MD Ref. No. 5849

#### for types GB T120

 Rain drainage for outdoor installation (drill holes for rain drainage is already prepared).

 GB-RA
 Ref. no. 9418

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#### Application

Noise-encapsulating centrifugal fans with retractable motor impeller unit and motor located outside the air flow. Suitable for rough operating conditions and to convey hot (up to +100 °C, types MBD EC to +120 °C) and damp air containing dirt and grease against high resistances. Ideal as an exhaust air fan for commercial kitchen extractor hoods.

#### MB EC

Optional MegaBox types with EC motor technology are available for energy-saving use and very low operating costs.

#### Casing

#### □ MB 315 – 400 and MB Ex

Dual-walled, made of galvanised sheet steel. Soundproof thanks to 50 mm thick mineral wool insulating board lining. Connecting duct pieces on the intake and exhaust side with rubber lip seal, coordinated to the standard diameter. Motor impeller unit is fully retractable for inspection and cleaning, suspended on stable hinges. Including mounting rails made of galvanised steel with screwedon vibration dampers for easy installation.

#### MB 225 – 280 and MB EC

As with the MD, but 30 mm thick mineral wool insulating board lining. With condensate drain and drip protection when the doors are open as standard.

#### Impellers

High-performance centrifugal impellers with a high degree of efficiency. All types are curved backwards and made of aluminium, MB EC 225 to 250 are made of galvanised steel. In the MB Ex range onwards, they will be curved forwards and made of galvanised steel. Dynamically balanced according to DIN ISO 1940 T.1 – grade 6.3.

### Motor

🗆 MB

Low-maintenance squirrel cage motor with IEC dimensions according to DIN EN 60034/VDE 0530 and DIN EN 60035-1/VDE 0700-1 and other prevalent standards. With flange mounting and self-ventilation. Thermal overload protection provided by thermal contacts built into the winder. Suitable for continuous operation S1. Insulation class F. Closed casing, IP 55.

#### □ MB EC

Energy-saving, speed-controlled IC internal rotor motor with degree of protection IP 55 with maximum efficiency, located outside the air flow. Low-maintenance and interference-free, ball bearing mounted.

### Speed control MB

The speed can be controlled in all types (excluding explosion protected types) by reducing the voltage using the transformer controller. The alternating current types can also be operated at two speeds by star delta connection or full motor protection devices. The performance can therefore be adjusted according to demand and optimally tailored to the desired operating point. The speed controllers on offer can operate one or more fans until the maximum nominal current is reached. A 10% power reserve is to be provided when sizing the speed controller.

#### MB EC

All EC types can be seamlessly controlled using a speed potentiometer. Furthermore, regulation with three-level switches or seamless regulation is possible using a universal control system or electronic differential pressure/temperature controller. Sample power levels are shown in the characteristic curve.

#### Electrical connection

Terminal boxes as standard with cables, degree of protection IP 55. When cutting the connecting cable to length, the pivot range of the motor impeller unit is to be taken into account. In MBD 315/2/2, 355/2/2 and 400/2/2 the terminal box is outside on the motor.

#### Motor protection

MB Thermal contacts on the terminal strip, which are wired to the full motor protection device from the terminal strip.

Integrated electronic temperature monitoring for EC motor and electronics. If the maximum permitted motor temperature is exceeded, in 3 ph. types the speed is automatically reduced and is once again controlled to reach the originally set value after it cools down. For 1 ph. types the motor is turned off if the maximum permitted temperature is exceeded.

#### Explosion protection

The types with explosion protection are in line with equipment group II, category 2G for operation in zone 1 and 2 in accordance with Directive 2014/34/EU (ATEX).

Airflow direction

The airflow direction cannot be changed in centrifugal fans. The correct direction of motor rotation is marked by arrows on the motor and is to be checked upon commissioning.

#### Incorrect direction of rotation

Operating the device in an incorrect direction of rotation overloads the AC motor and trips the thermal contacts. Typical concomitant features include: Low air flow capacity, vibration and abnormal sound.

#### Air flow temperature

The maximum permitted air flow temperature is shown in the type table.

### Ambient temperature

From -40 °C to +40 °C.

#### Installation position, mounting During positioning, the pivot range and weight of the motor impeller unit must be taken into account, as well as the ease of accessibility.

#### Transfer of structure-born sound

is to be prevented on the building and ducting system. The fan must not be rigidly connected to the ducting; flexible sleeves (type FM, accessory) are to be used.

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full motor protection unit Universal control system, electronic controller, speed-potentiometer	525 on
for MB EC types	539 on



By combining the parameters of static pressure increase  $\Delta p_{\text{fa}},$  case breakout and intake air noise as sound pressure at 1 m

(free field conditions), the following table facilitates the selection of MegaBox centrifugal fans.

	Sound press. case breakout	Sound press. intake	Air flow vo	r flow volume V m <sup>s</sup> /h in relation to static pressure												
Туре	L <sub>PA</sub> dB(A)	L <sub>PA</sub> dB(A)	$(\Delta P_{fa})$ in P	а												
	at 1 m	at 1m	0	50	100	200	300	400	500	600	700	800	1000	1500	2000	
MBW EC 225	55	66	1350	1238	1250	1123	1000	878	764	500						
MBW EC 250	56	73	1900	1815	1730	1560	1420	1270	1125	985	800					
MBW EC 280	56	71	2620	2550	2475	2320	2150	1945	1680	1380	1000	545				
MBD EC 280	58	75	3000	2940	2860	2740	2625	2440	2300	2140	1945	1625	900			
MBW EC 315	50	62	2150	2035	1915	1620	1000									
MBD EC 315 A	59	73	3400	3320	3235	3080	2920	2740	2550	2270	1900	1380				
MBD EC 315 B	65	81	4200	4140	4065	3920	3800	3670	3530	3380	3220	3090	2700			
MBW EC 355	54	69	3050	2920	2790	2470	2080	1350								
MBD EC 355 A	66	78	5000	4890	4830	4680	4550	4380	4240	4045	4100	3530	2914			
MBD EC 355 B	68	82	5600	5520	5450	5255	5130	4940	4770	4640	4470	4300	3850	2210		
MBD EC 400 A	68	80	5000	4890	4760	4565	4370	4130	3870	3520	3050	2200				
MBD EC 400 B	72	85	6550	6475	6400	6300	6160	6000	5800	5550	5350	5100	4550	2525		

	Sound press. case breakout	Sound press. intake	Air flow vol	ir now volume v m-yn in relation to statić pressure												
Туре	L <sub>PA</sub> dB(A)	L <sub>PA</sub> dB(A)	$(\Delta P_{fa})$ in Pa	1												
	at 1 m	at 1m	0	50	100	200	300	400	500	600	700	800	1000	1500	2000	
MBD 160/4 Ex	48	64	960	850	730											
MBD 160/2 Ex	63	79	2020	1970	1920	1820	1700	1570	1420	1270	1110					
MBD 180/4 Ex	51	67	1390	1290	1180	860										
MBD 200/4 Ex	54	70	*	*	1840	1530	1080									
MBW 225/2	52	64	1170	1130	1090	1010	920	800	640	370						
MBD 225/2/2	52	65	1170	1130	1090	1000	900	790	650	310						
MBD 225/4 Ex	56	74	*	2720	2570	2250	1840	940								
MBW 250/2	55	68	1620	1580	1530	1430	1320	1200	1040	850	510					
MBD 250/2/2	56	68	1590	1550	1510	1430	1330	1210	1050	860	250					
MBD 250/4 Ex	62	78	4130	3990	3840	3520	3150	2670	1950							
MBD 280/2/2	60	75	2520	2470	2420	2320	2190	2040	1880	1710	1510	1250				
MBD 280/6 Ex	56	72	*	*	3240	2740										
MBD 280/4 Ex	65	81	*	*	*	*	4800	4410	3900	3150						
MBW 315/4	41	61	1950	1820	1640	1270	820									
MBD 315/4/4	41	61	1990	1860	1720	1310	910									
MBD 315/2/2	64	80	3980	3910	3820	3660	3450	3500	3050	2750	2630	2440	2090	800		
MBW 355/4	43	60	2810	2660	2520	2070	1630	1140								
MBD 355/4/4	42	60	2850	2660	2440	2070	1650	1200								
MBD 355/2/2	68	84	5800	5770	5680	5480	5280	5030	4800	4570	4390	4160	3700	2700		
MBW 400/4	48	70	3550	3360	3170	2800	2470	2090	1640	750						
MBD 400/4/4	50	69	3440	3290	3140	2800	2460	2100	1630	720						
MBD 400/2/2	74	90	7500	7380	7270	7070	6830	6660	6480	6310	6130	5990	5610	4730	3500	

\* Consider necessary minimum system resistance.









#### Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Condensation drain and drip protection with the door opened as standard. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Backward curved high output centrifugal-impeller, made from galvanised steel, mounted directly to the motor shaft. High efficiency, low noise level. Dynamically balanced to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Energy-saving, speed controllable EC-internal rotor motor with highest efficiency, out of the air stream, protection to IP 55. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 55) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic speed-/performance adjustment is carried out.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

Saving

with speed control

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

#### Accessories

Wall bracket from galv. sheet steel Type MB-WK EC225 No. 5526

Rain repellent roof from galv. sheet steel, mounting above the motor. Type MB-WSD EC225 No. 1856

Flexible sleeve for installationbetween fan and ducting.- max. temperature +70 °CType FM 200No. 1670- max. temperature +120 °CType FM 200 T120No. 1654

Accessory details	Page
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electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Uni contro	versal ol system	flu	Speed-pot Jsh	entiometer sur	face
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor,	1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55															
MBW EC 225	<b>5</b> 5842	200	1350	3000	55	0.27	1.20	985	100	25	EUR EC	1) 2) 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
(SU) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories																







#### Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Condensation drain and drip protection with the door opened as standard. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Backward curved high output centrifugal-impeller, made from galvanised steel, mounted directly to the motor shaft. High efficiency, low noise level. Dynamically balanced to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Energy-saving, speed controllable EC-internal rotor motor with highest efficiency, out of the air stream, protection to IP 55. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 55) is mounted with a permanently attached cable.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic speed-/performance adjustment is carried out.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

Saving

with speed control

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake
- Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

#### Accessories

Wall bracket from galv. sheet steelType MB-WK EC250No. 5526

Rain repellent roof from galv. sheet steel, mounting above the motor. Type MB-WSD EC250 No. 1856

Flexible sleeve for installationbetween fan and ducting.- max. temperature +70 °CType FM 250No. 1672- max. temperature +120 °CType FM 250 T120No. 1655

Accessory details	Page
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electronic controller,	
speed-potentiometer	539 on

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Uni contro	versal I system	flu	Speed-pot sh	entiometer surfa	ace
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor,	1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55															
MBW EC 250	5843	250	1900	3000	56	0.38	1.70	985	100	28.0	EUR EC	1) 2) 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
1) several EC fai	ns can norm	ally be conned	cted 2) alterna	tive electroni	c differential pr	essure/temp.	controller (ED	R/ETR, No. 14	437/1438) or t	hree-step	speed co	ntroller (SU	/SA, No. 42	66/4267),	see access	ories

<sup>1</sup>√ m<sup>3</sup>/h









#### Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Condensation drain and drip protection with the door opened as standard. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Backward curved, free-running high-performance centrifugal impeller made from aluminium, mounted directly to the motor shaft. High efficiency, low noise level. Dynamically balanced to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Energy-saving, speed controllable EC-internal rotor motor with highest efficiency, out of the air stream, protection to IP 55. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on outside of motor, with a permanently attached cable for 1~ type.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic reduction of speed is carried out for 3~ type which is reset to the original set value after cooling. For 1~ type, the motor is switched off when the maximum permitted temperature is exceeded.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake

Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	flow Weight Universal ture net control system approx.		Universal control system		ight Universal et control system rox.		Speed-pot Ish	peed-potentiometer 1 surface	
		mm	V m³∕h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.		
1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55																		
MBW EC 280	<b>0</b> 5850	280	2630	2450	56	0.48	2.10	985	100	33.0	EUR EC <sup>1)</sup>	<b>2)</b> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735		
3 ph. motor	3~, 400 V,	50/60 Hz, EC	motor, prote	ection to IP	55													
MBD EC 280	5845	280	3000	3000	58	0.75	1.40	988	120	34.0	EUR EC <sup>1)</sup>	<b>2)</b> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735		
1) several EC fa	ins can norm	ally be conned	cted 2) alterna	tive electronio	c differential pr	ressure/temp.	controller (ED	R/ETR, No. 1	437/1438) or t	hree-step	speed cont	roller (SU	/SA, No. 42	266/4267),	see access	ories		



#### **MBW EC 280**



#### **MBD EC 280**



#### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel. Type MB-WK EC280 No. 5527



#### Rain repellent roof

For protected outdoor installation. Made from galvanised sheet steel, Mounted above motor. Type MB-WSD EC280 No. 1856



#### Flexible sleeve

Supplied with two hose clips as standard; for installation between fan and duct system. Prevents sound and vibration transmission to ducting and corrects small site misalignments.

- max. temperature +	70 °C	
Type FM 280	No.	1673
- max. temperature +	120 °C	
Type FM 280 T120	No.	1656

#### Universal control system

Speed-potentiometer

tiometer input. Type PU 10

For direct control/setpoint specification for EC fans with poten-

for flush mounted installation. Type PA 10

for surface mounted installation.

Ref. no. 1734

Ref. no. 1735

Type EUR EC Ref. no. 1347 For stepless control or regulation of single and three-phase EC fans with a setpoint input of 0-10 V DC.







#### Accessory details Page Universal control system, electronic controller, 539 on speed-potentiometer









#### Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Condensation drain and drip protection with the door opened as standard. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Backward curved, free-running high-performance centrifugal impeller made from aluminium, mounted directly to the motor shaft. High efficiency, low noise level. Dynamically balanced to DIN ISO 1940 Pt.1 – class 6.3.

#### Motor

Energy-saving, speed controllable EC-internal rotor motor with highest efficiency, out of the air stream, protection to IP 55. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on outside of motor, with a permanently attached cable for 1~ type.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic reduction of speed is carried out for 3~ types which is reset to the original set value after cooling. For 1~ type, the motor is switched off when the maximum permitted temperature is exceeded.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intake

Sound level exhaust In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Univ control	ersal system	l Speed-p iem flush		eed-potentiometer surfa	
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55																
MBW EC 31	<b>5</b> 5852	355	2150	1500	50	0.20	0.85	985	100	43.0	EUR EC <sup>1</sup>	) <sup>2)</sup> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
3 ph. motor	3~, 400 V,	50/60 Hz, EC	; motor, prote	ction to IP	55											
MBD EC 315	<b>5 A</b> 5851	355	3400	2400	59	0.72	1.30	988	120	44.0	EUR EC <sup>1</sup>	) <sup>2)</sup> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 315	<b>5 B</b> 5846	355	4200	3000	65	1.38	2.20	988	120	50.0	EUR EC <sup>1</sup>	) <sup>2)</sup> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories



# Ecgreen

#### **MBW EC 315**



#### MBD EC 315 A



#### MBD EC 315 B



#### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel. Type MB-WK EC315 No. 5527



#### Rain repellent roof

For protected outdoor installation. Made from galvanised sheet steel, Mounted above motor. Type MB-WSD EC315 No. 1865



#### Flexible sleeve

Supplied with two hose clips as standard; for installation between fan and duct system. Prevents sound and vibration transmission to ducting and corrects small site misalignments.

- max. temperature + /0	)°C	
Type FM 355	No.	1675
- max. temperature +12	20 °C	
Type FM 355 T120	No.	1658

#### Universal control system

 Type EUR EC
 Ref. no. 1347

 For stepless control or regulation of single and three-phase EC fans with a setpoint input of 0–10 V DC.

#### Speed-potentiometer

For direct control/setpoint specification for EC fans with potentiometer input.

Type PU 10Ref. no. 1734for flush mounted installation.Type PA 10Ref. no. 1735for surface mounted installation.







#### Accessory details Page Universal control system, electronic controller, speed-potentiometer 539 on

# 355 mm ø MegaBox EC backward curved impeller



# **Helios**







#### Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Condensation drain and drip protection with the door opened as standard. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Backward curved, free-running high-performance centrifugal impeller made from aluminium, mounted directly to the motor shaft. High efficiency, low noise level. Dynamically balanced to DIN ISO 1940 Pt.1 – grade 6.3.

#### Motor

Energy-saving, speed controllable EC-internal rotor motor with highest efficiency, out of the air stream, protection to IP 55. With ball bearings, maintenance-free and interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on outside of motor, with a permanently attached cable for 1~ type.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic reduction of speed is carried out for 3~ types which is reset to the original set value after cooling. For 1~ type, the motor is switched off when the maximum permitted temperature is exceeded.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Sound levels

Total sound power levels and the spectrum figures in dB(A) are given for:

- Sound level case breakout
- Sound level intakeSound level exhaust

In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Universal control system		Speed-pot flush		d-potentiometer surface	
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55																
MBW EC 355	<b>5</b> 5854	355	3050	1500	54	0.33	1.50	985	100	50.0	EUR EC	1) <b>2)</b> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
3 ph. motor	3~, 400 V,	50/60 Hz, EC	motor, prote	ection to IP	55											
MBD EC 355	<b>A</b> 5853	355	5000	2500	66	1.45	2.20	988	120	56.0	EUR EC	1) 2) 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 355	<b>B</b> 5847	355	5600	2800	68	1.90	3.10	988	120	63.0	EUR EC	1) 2) 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735

1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories



# ECgreen

#### **MBW EC 355**



#### MBD EC 355 A



#### MBD EC 355 B



#### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel. Type MB-WK EC355 No. 5528



#### Rain repellent roof

For protected outdoor installation. Made from galvanised sheet steel, Mounted above motor. Type MB-WSD EC355 No. 1865



#### Flexible sleeve

Supplied with two hose clips as standard; for installation between fan and duct system. Prevents sound and vibration transmission to ducting and corrects small site misalignments.

<ul> <li>max. temperature + 70</li> </ul>	)°C	
Type FM 355	No.	1675
- max. temperature +12	0 °C	
Type FM 355 T120	No.	1658

#### Universal control system

 Type EUR EC
 Ref. no. 1347

 For stepless control or regulation of single and three-phase EC fans with a setpoint input of 0–10 V DC.

#### Speed-potentiometer

For direct control/setpoint specification for EC fans with potentiometer input.

Type PU 10Ref. no. 1734for flush mounted installation.Type PA 10Ref. no. 1735for surface mounted installation.







#### Accessory details Page Universal control system, electronic controller, speed-potentiometer 539 on





Condensation outlet

Spigot: Ø 400 mm

Central



#### Casing

8

Casing, impeller, motor and sound levels see description on page 272.

450

770

33/

#### Electrical connection

Standard terminal box (IP 55) on outside of motor.

#### Motor protection

Integrated electronic temperature monitoring for EC-motor and electronics. During exceedance of the maximum permitted temperatures an automatic reduction of speed is carried out, which is reset to the original set value after cooling.

#### Speed control

Stepless speed control with potentiometer or stepless speed control with universal control system (see table). Duties at different speeds are exemplarily given in the performance curve.

#### Accessories

Wall bracket

ø 400

ø 400

Made from galvanised sheet steel. Type MB-WK EC400 No. 5528

55

Dim. in mm

#### Rain repellent roof

Made from galvanised sheet steel, Mounted above motor. Type MB-WSD EC400 No. 1865

#### Flexible sleeve

for installation between fan and duct system. - max. temperature +70 °C Type FM 400 No. 1676 - max. temperature +120 °C Type FM 400 T120 No. 1659

with speed control

Туре	Ref. no.	Connection Ø	Air flow volume (FID)	R.P.M.	Sound press. case breakout	Motor power	Current	Wiring diagram	max.air flow temperature	Weight net approx.	Universal control system		niversal Speed- rol system flush		Speed-potentiometer lush surf	
		mm	∀m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	No.	+ °C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
3 ph. motor 3~, 400 V, 50/60 Hz, EC motor, protection to IP 55																
MBD EC 40	<b>D A</b> 5855	400	5000	2000	68	1.30	2.00	988	120	65.0	EUR EC	<b>1) 2)</b> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 40	<b>DB</b> 5848	400	6550	2600	72	2.65	4.10	988	120	72.0	EUR EC	<b>1) 2)</b> 1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
0			2)													

1) several EC fans can normally be connected <sup>2</sup>) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories

#### MBD EC 400 A Hz 125 55 250 500 1k 4k Frequency 2k 8k 70 82 71 68 L<sub>WA</sub> Case breakout dB(A) 76 69 63 60 65 70 79 dB(A) 80 79 81 73 L<sub>WA</sub> Intake 85 84 83 79 73 L<sub>WA</sub> Exhaust dB(A) 89 ∆p<sub>fa</sub> Pa $\rho = 1,20 \text{ kg/m}^3$ 10 V 1000 2 8 V 3 6 V 800 4 4 V (5) 2 V 600 400 200 Vm<sup>3</sup>/h 0 1000 2000 3000 4000 5000 Free discharge **Ý** m³/h Lp dB(A) SFP kW/m<sup>3</sup>/s Voltage V n min<sup>-1</sup> ΡW IA 5000 1120 2000 1,8 68 0,81 1750 4400 65 800 520 320 0,50 1500 3750 0,90 62 57 0.60 1250



1600

800

270

2,60 1,50

0,60

69

64

57

1.06

0,68

0,35

EC <b>green</b> ® Vent	<b>55%</b> Saving *	
	* with chood control	

2300

1800

1250

5400

4200

2900

MB Ex

8k

c m/s

10 8

V m³/h





#### Casing

Acoustically lined double skinned galvanised steel casing with 50 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust die-cast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Forward curved high-performance centrifugal impeller made from galvanised steel, together with the dynamically balanced motor.

High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) on outside of motor.

#### Accessories

400

200

0

0

MBD 160/4 Ex

Hz

250 500

125

1k 2k 4k

39 57

59

800

 54
 50

 72
 68

 74
 70

8k

46

c m/s

20

16

12

8

4

0

2000 V m3/h

68 64 70 66

ρ = 1.20 kg/ ① △ 400 V

35 31

53 49

55 51

 $\rho = 1.20 \text{ kg/m}$ \_\_\_\_\_\_\_ △ 400 V

#### Wall bracket

rom galvanised sheet steel. Type MB-WK 160 No. 5526

500

1000

#### Rain repellent roof

Made from galvanised s	heet steel,	
Mounted above motor.		
Type MB-WSD	No. 1856	3

#### Flexible sleeve

for installation between fan and duct system. Type FM 200 Ex No. 1686

Information	Page
Techn. description,	
selection chart	264 on

Inadmissible range

1500

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Curr full load	rent* speed control	Wiring diagram	max.a tempera full load	ir flow ature at control	Weight net approx.	5-step transformer with full motor protect.		5-step transformer speed co with with ull motor protect. full moto		ed controller Full motor prot without for connection motor protect. built-in therma	
		V m³∕h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55																	
MBD 160/4	<b>Ex</b> 6001	970	1370	48	0.37	1.08	—	470	40	—	25.0	not p	ermitted	not p	ermitted	—	
MBD 160/2	<b>Ex</b> 6002	2020	2840	63	1.50	3.15	—	470	40	—	34.0	not p	ermitted	not p	ermitted	—	
* For Ex-types:	For Ex-types: Motor rated values, see Information p. 16																

Box ans







#### Casing

Acoustically lined double skinned galvanised steel casing with 50 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Forward curved high-performance centrifugal impeller made from galvanised steel, together with the dynamically balanced motor.

High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) on outside of motor.



#### Accessories

#### Wall bracket

Made from galvanised sheet steel.Type MB-WK 180No. 5526

#### Rain repellent roof

Made from galvanised s	heet s	steel,
Mounted above motor.		
Type MB-WSD	No.	1856

Flexible sleeve for installation between fan and duct system. Type FM 200 Ex No. 1686

Information	Page
Techn. description,	
selection chart	264 on

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Curr full load	rent* speed control	Wiring diagram	ring max.air flow Weight 5-step transformer speed controlle gram full load control approx. full motor protect, full motor protect.		er speed controller without . full motor protect.	Full mot for con built-in t	or prortect. nection of herma cont.		
		♡ m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Type Ref. no.	Type Ref. no.	Туре	Ref. no.
Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55															
MBD 180/4	<b>4 Ex</b> 6004	1370	1420	51	0.37	1.08	—	470	40	—	29.0	not permitted	not permitted	—	—
For Fx-type	For Fx-types: Motor rated values, see Information n. 16														

# MegaBox 200 mm ø backward curved impeller





#### Casing

Acoustically lined double skinned galvanised steel casing with 50 mm thick mineral fibreboard. Swing out motor and impeller unit, fixed with robust diecast hinges. Intake and exhaust spigots with twin-seal rubber gasket. Easy installation with 2 sturdy mounting rails, manufactured from galvanised steel complete with anti vibration mounts.

#### Impeller

Forward curved high-performance centrifugal impeller made from galvanised steel, together with the dynamically balanced motor.

High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

Electrical connection Standard terminal box (IP 55) on outside of motor.



#### Accessories

#### Wall bracket

rom galvanised sheet steel. **Type MB-WK 200** No. 5526

#### Rain repellent roof

Made from galvanised s	heet :	steel,
Mounted above motor.		
Type MB-WSD	No.	1856

Flexible sleeve

for installation between fan and duct system. Type FM 200 Ex No. 1686

Information	Page
Techn. description,	
selection chart	264 on

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Curr full load	rent* speed control	Wiring diagram	max.a tempera full load	ir flow ature at control	Weight net approx.	5-step transforme with full motor protect.	r speed controller without full motor protect.	Full moto for control built-in th	or prortect. nection of nerma cont.
		以 m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Type Ref. no.	Type Ref. no.	Туре	Ref. no.
Explosion-	Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55														
MBD 200/4	<b>Ex</b> 6008	1840	1430	54	0.55	1.36	_	470	40	—	35.0	not permitted	not permitted	—	—
For Ex-type	s: Motor rate	d values, see In	formation p.	16											

Box ans

#### 225 mm ø MegaBox backward / forward curved impeller







Casing See page 264.

#### Impeller

Forward curved high-performance centrifugal impeller made from aluminium and forward curved made from galvanised steel for ex-proof types. Together with the dynamically balanced motor. High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for ex-proof types.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

```
See page 264.
```

#### Accessories

Wall bracket galv. sheet steel.Type MB-WK EC225No. 5526

Wall bracket for Ex-typesType MB-WK 225No. 5527

Rain repellent roof from galv.sheet steel, Mounted above motor.Type MB-WSDNo. 1856







 
 Flexible sleeve for installation between fan and duct system.

 FM 200
 (+70 °C) No. 1670

 FM 200 T120
 (+120 °C) No. 1654

 FM 250 Ex
 No. 1688
 **Speed and on/off switch** for twospeed Y/△ switchable three phase fans.

Type DS 2<sup>3)</sup> Ref. no. 1351

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Curr full load	ent* speed control	Wiring diagram	max. air flow temperature at full load control		Weight 5-s net approx. full		transforme ith or protect.	her speed controller without t. full motor protect		Full mot for con built-in t	tor prortect. nection of herma cont.
		∀m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor, 230 V, 50 Hz, capacitor motor, protecton to IP 55																	
MBW 225/2	6456	1170	2900	52	0.21	1.10	1.80	1119	100	60	25.0	MWS 3	1948	TSW 3,0	<b>)</b> 1496	MW <sup>1)</sup>	1579
Two-speed,	3 ph. moto	r, 400 V, 50 H	lz, Y/∆ wiri	ng, protectior	n to IP 55												
MBD 225/2/	<b>2</b> 6457	1100/1170	2675/2885	49/52	0.16/0.20	0.29/0.57	0.57	520	100	60	25.0	RDS 1	1314	TSD 0,8	<sup>3)</sup> 1500	M4 <sup>2)</sup>	1571
Explosion-p	roof Ex e II	, temp. class	T1 – T3, 3 p	h. motor 400	V, 50 Hz, pr	otection to IF	P 55										
MBD 225/4	<b>Ex<sup>4)</sup></b> 6011	2770	1390	56	0.75	2.00	—	470	40	—	40	not pe	ermitted	not per	mitted	—	—
* For Ex-types: 4) Dimensional	Motor rated drawing on	values, see In www.HeliosSe	formation p. <sup>-</sup> lect.de	16 1) ir	ncl. operating	switch	2) incl. op	erating and	speed swit	ch	3) nece	essary ful	I motor pro	otection d	evice: Typ	e MD, No	. 5849

278





Casing See page 264.

#### Impeller

Backward curved high-performance centrifugal impeller made from aluminium and forward curved made from galvanised steel for ex-proof types. Together with the dynamically balanced motor. High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for ex-proof types.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

See page 264.

#### Accessories

Wall bracket galv. sheet steel.Type MB-WK EC250No. 5526

Wall bracketfor ex-typesType MB-WK 250No. 5527

Rain repellent roof from galv.sheet steel, Mounted above motor.Type MB-WSDNo. 1856







 Flexible sleeve
 for installation between fan and duct system.

 FM 250
 (+70 °C) No. 1672

 FM 250 T120 (+120 °C) No. 1655
 FM 315 Ex

Speed and on/off switch for twospeed Y/△ switchable three phase fans.

Type DS 2<sup>3)</sup> Ref. no. 1351

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Curi full load	rent* speed control	Wiring diagram	max.air flow We temperature at r full load control apj		Weight net approx.	t 5-step transform with k. full motor protec		r speed with full mot	controller nout or protect.	Full motor prortect. for connection of built-in therma cont	
		V m³∕h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Туре	Ref. no.	Туре	Ref. no.	Туре	Ref. no.
1 ph. motor, 230 V, 50 Hz, capacitor motor, protecton to IP 55																	
MBW 250/2	6458	1620	2840	55	0,30	1.40	2.10	1119	100	60	28.0	MWS 3	1948	TSW 3	<b>,0</b> 1496	MW <sup>1)</sup>	1579
Two-speed,	3 ph. moto	r, 400 V, 50 H	lz, Y/∆ wiriı	ng, protecton	to IP 55												
MBD 250/2/2	<b>2</b> 6459	1470/1600	2500/2820	53/56	0,23/0,29	0.40/0.70	0.70	520	100	60	28.0	RDS 1	1314	TSD 0,	<b>8<sup>3)</sup> 1500</b>	M4 <sup>2)</sup>	1571
Explosion-pr	roof Ex e II,	, temp. class	T1 – T3, 3 p	h. motor 400	V, 50 Hz, pro	otection to II	P 55										
MBD 250/4 E	<b>Ex<sup>4)</sup> 6014</b>	4140	1405	62	1.50	3.35	—	470	40	—	52.0	not pe	ermitted	not pe	ermitted	—	—
* For Ex-types: <sup>4)</sup> Dimensional	Motor rated drawing on v	values, see In www.HeliosSe	formation p. 1 lect.de	6 1) ir	icl. operating	switch	2) incl. ope	erating and	speed swit	ch	3) nece	essary ful	I motor pro	otection	device: Typ	e MD, No	. 5849

Box fans

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#### 280 mm ø MegaBox backward / forward curved impeller







Casing See page 264.

#### Impeller

Forward curved high-performance centrifugal impeller made from aluminium and forward curved made from galvanised steel for ex-proof types. Together with the dynamically balanced motor. High efficiency, low noise, aerodynamically optimised volute casing.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for ex-proof types.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

Speed control See page 264.

#### Accessories

Wall bracket galv. sheet steel. Type MB-WK EC280 No. 5527

Wall bracket for ex-types Type MB-WK 280 No. 5527

Rain repellent roof from galv. sheet steel, Mounted above motor. Type MB-WSD No. 1856







Flexible sleeve for installation between fan and duct system. FM 280 (+70 °C) No. 1673 FM 280 T120 (+120 °C) No. 1656 FM 315 Ex No. 1690

Speed and on/off switch for twospeed Y/△ switchable three phase fans. Type DS 2<sup>2)</sup> Ref. no. 1351

Туре	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Cur full load	rent* speed control	Wiring diagram	max.a tempera full load	ir flow ature at control	Weight net approx.	5-step transforme with full motor protect.	er speed controller without full motor protect.	Full mot for con built-in t	or prortect. nection of herma cont.	
		以 m³∕h	min <sup>-1</sup>	dB(A) in 1 m	kW	А	А	No.	+°C	+°C	kg	Type Ref. no.	Type Ref. no.	Туре	Ref. no.	
Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/ $ riangle$ wiring, protecton to IP 55																
MBD 280/2	<b>2/2</b> 6460	2400/2520	2680/2890	56/60	0.48/0.57	0.80/1.50	1.60	520	100	60	35.0	RDS 2 1315	<b>TSD 3,0<sup>2)</sup></b> 1502	M4 <sup>1)</sup>	1571	
Explosion-	proof Ex e l	l, temp. class	s T1 – T3, 3 p	h. motor 230	/400 V, 50 H	z, protection	to IP 55									
MBD 280/6	6016 <b>Ex<sup>3)</sup></b>	2960	925	56	0.95	2.70	—	498	40	—	60.0	not permitted	not permitted	—	—	
MBD 280/4	<b>4 Ex <sup>3)</sup> 6017</b>	4960	1420	65	2.00	4.65	_	498	40	—	68.0	not permitted	not permitted	—	_	
* For Ex-types	s: Motor rated	l values, see Ir	formation p. <sup>-</sup>	16	1) incl. operat	ing and speed	l switch	2) necessary full motor protection device; Type MD, No, 5849								

3) Dimensional drawing on www.HeliosSelect.de 280

ope ng a d sp ry r p тур





Casing See page 264.

#### Impeller

Backward curved high-performance centrifugal impeller made from aluminium, directly mounted to motor shaft. High efficiency, low noise, aerodynamically optimised volute

casing. Dynamically balanced according to DIN ISO 1940 T.1 – grade 6.3.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for type MBD 315/2/2.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable through voltage reduction by means of transformer (accessories).

The  $3\sim$  types can also be operated at two speeds through the  $Y/\triangle$  switch or full motor protection device M4. The performance stages are shown in the characteristic curve.

#### Accessories

# Wall bracket galv. sheet steel.Type MB-WK 315No. 5528

Rain repellent roof from galv.sheet steel, Mounted above motor.Type MB-WSDNo. 1856





#### MBD 315/2/2



 Flexible sleeve
 for installation between fan and duct system.

 FM 355
 (+70 °C) No. 1675

 FM 355 T120
 (+120 °C) No. 1658

Speed and on/off switch for two-<br/>speed Y/△ switchable three phase<br/>fans.Type DS 2 ³)Ref. no. 1351

Wiring Туре Ref. no. Air flow R.P.M. Sound press Motor max.air flow Weight net 5-step transformer speed controller Full motor prortect. Current full case breakout with without for connection of full motor protect. full motor protect. built-in therma cont. volume power speed diagram temperature at load control full load max control approx. ∀m³/h min<sup>-1</sup> dB(A) in 1 m kW No kg Type Ref. no. Type Ref. no. Туре Ref. no. Α +°C +°C 1 ph. motor, 230 V, 50 Hz, capacitor motor, protecton to IP 55 MBW 315/4 5929 1950 1400 0.80 0.97 1119 100 60 72.0 MWS 1,5 1947 TSW 1,5 1495 MW<sup>1)</sup> 1579 41 0.16 Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/A wiring, protecton to IP 55 MBD 315/4/4 5945 1730/1990 1180/1430 37/41 0.14/0.16 0.27/0.37 60 72.0 RDS 1 1314 TSD 0,8<sup>3)</sup> 1500 M4<sup>2)</sup> 1571 0.46 520 100 1316 TSD 3,0<sup>3)</sup> 1502 M4<sup>2)</sup> MBD 315/2/2 5946 3300/3980 2270/2780 60/64 0.86/1.16 1.40/2.20 2.40 520 100 60 75.0 RDS 4 1571 3) necessary full motor protection device: Type MD, No. 5849 1) incl. operating switch 2) incl. operating and speed switch

Box fans







Casing See page 264.

#### Impeller

Forward curved high-performance centrifugal impeller made from aluminium, directly mounted to motor shaft. High efficiency, low noise, aero-

dynamically optimised volute casing.

Dynamically balanced according to DIN ISO 1940 T.1 – grade 6.3.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for type MBD 355/2/2.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable through voltage reduction by means of transformer (accessories).

The 3~ types can also be operated at two speeds through the Y/△ switch or full motor protection device M4. The performance stages are shown in the characteristic curve.

#### Accessories Wall bracket galv. sheet steel.

Type MB-WK 355No. 5528Rain repellent roof from galv.

sheet steel, Mounted above motor. Type MB-WSD No. 1856







 
 Flexible sleeve
 for installation between fan and duct system.

 FM 400
 (+70 °C) No. 1676

 FM 400 T120
 (+120 °C) No. 1659
 Speed and on/off switch for twospeed Y/△ switchable three phase fans. Type DS 2<sup>3</sup> Ref. no. 1351

Wiring Ref. no. Air flow R.P.M Sound press Motor max.air flow 5-step transformer speed controller Full motor prortect. Туре Current Weight full case breakout speed net with without for connection of full motor protect. full motor protect. built-in therma cont. volume power diagram temperature at max load contro full load control approx. ∀m³/h min<sup>-1</sup> dB(A) in 1 m kW +°C Туре Ref. no. Type Ref. no. Ref. no. Δ No +°C kq Туре 1 ph. motor, 230 V, 50 Hz, capacitor motor, protecton to IP 55 MBW 355/4 5951 2810 1410 43 0.30 MWS 3 1948 TSW 3,0 1496 MW<sup>1)</sup> 1579 1.40 1.90 1119 100 60 81 Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/A wiring, protecton to IP 55 MBD 355/4/4 5947 2530/2850 1240/1430 40/42 0.26/0.30 0.45/0.63 60 81.0 RDS 2 1315 TSD 1,5<sup>3)</sup> 1501 M4<sup>2)</sup> 1571 0.84 520 100 MBD 355/2/2 5948 5210/5800 2840/2510 65/68 2.20/1.65 2.9/5.0 5.50 520 100 60 100.0 RDS 7 1578 TSD 7,0<sup>3)</sup> 1504 M4<sup>2)</sup> 1571 1) incl. operating switch 3) necessary full motor protection device: Type MD, No. 5849 2) incl. operating and speed switch

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Casing See page 264.

#### Impeller

Forward curved high-performance centrifugal impeller made from aluminium, directly mounted to motor shaft. High efficiency, low noise, aerodynamically optimised volute casing.

Dynamically balanced according to DIN ISO 1940 T.1 - grade 6.3.

#### Motor

Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### Electrical connection

Standard terminal box (IP 55) mounted on running cable and outside of motor for type MBD 400/2/2.

#### Motor protection

Motors have thermal contacts wired to the terminal box and must be connected to a motor protection unit.

#### Speed control

All types are speed controllable through voltage reduction by means of transformer (accessories).

The 3~ types can also be operated at two speeds through the Y/A switch or full motor protection device M4. The performance stages are shown in the characteristic curve.

#### Accessories

#### Wall bracket galv. sheet steel. Type MB-WK 400 No. 5528

Rain repellent roof from galv. sheet steel, Mounted above motor. Type MB-WSD No. 1856



MBD 400/4/4



#### MBD 400/2/2



Flexible sleeve for installation between fan and duct system. FM 400 (+70 °C) No. 1676 FM 400 T120 (+120 °C) No. 1659 Speed and on/off switch for twospeed Y/ $\triangle$  switchable three phase fans. Type DS 2<sup>3)</sup> Ref. no. 1351

Wiring Туре Ref. no. Air flow R.P.M. Sound press Motor max.air flow Weight net 5-step transformer speed controller Full motor prortect. Current full case breakout with without for connection of full motor protect. full motor protect. built-in therma cont. volume power speed diagram temperature at load control max full load control approx. ∀m³/h min<sup>-</sup> dB(A) in 1 m kW Туре Ref. no. Type Ref. no. Туре Ref. no. Δ No +°C +°0 kq 1 ph. motor, 230 V, 50 Hz, capacitor motor, protecton to IP 55 MBW 400/4 5953 3550 1410 2.50 100 60 85.0 MWS 7,5 1950 TSW 7,5 1596 MW<sup>1)</sup> 1579 48 0.49 3.70 1119 Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/A wiring, protecton to IP 55 MBD 400/4/4 5955 3030/3440 1180/1410 60 82.0 RDS 2 1315 TSD 1,5<sup>3)</sup> 1501 M4<sup>2)</sup> 1571 46/50 0.41/0.50 0.71/1.00 1.30 520 100 MBD 400/2/2 5949 6570/7500 2840/2510 71/74 3.10/3.70 6.10/4.80 9.00 520 100 60 110.0 RDS 11 1332 TSD 11<sup>3)</sup> 1513 M4<sup>2)</sup> 1571 3) necessary full motor protection device: Type MD, No. 5849

1) incl. operating switch

2) incl. operating and speed switch

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