

■ **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 screwed-on 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 60335-1/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.

□ **MB EC**

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

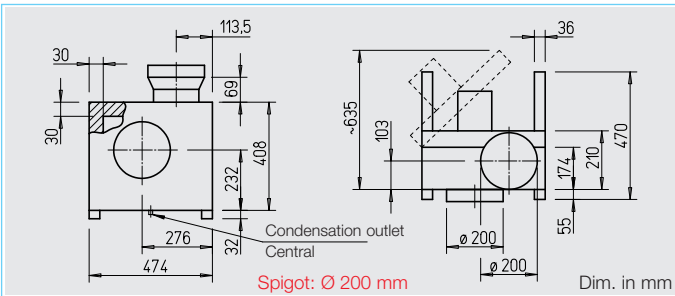
(free field conditions), the following table facilitates the selection of MegaBox centrifugal fans.

Type	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V} \text{ m}^3/\text{h}$ in relation to static pressure												
	$L_{\text{PA}}$ dB(A)	$L_{\text{PA}}$ dB(A)	$(\Delta P_{\text{ia}})$ in Pa												
	at 1 m	at 1 m	0	50	100	200	300	400	500	600	700	800	1000	1500	2000
<b>MBW EC 225</b>	55	66	1350	1238	1250	1123	1000	878	764	500					
<b>MBW EC 250</b>	56	73	1900	1815	1730	1560	1420	1270	1125	985	800				
<b>MBW EC 280</b>	56	71	2620	2550	2475	2320	2150	1945	1680	1380	1000	545			
<b>MBD EC 280</b>	58	75	3000	2940	2860	2740	2625	2440	2300	2140	1945	1625	900		
<b>MBW EC 315</b>	50	62	2150	2035	1915	1620	1000								
<b>MBD EC 315 A</b>	59	73	3400	3320	3235	3080	2920	2740	2550	2270	1900	1380			
<b>MBD EC 315 B</b>	65	81	4200	4140	4065	3920	3800	3670	3530	3380	3220	3090	2700		
<b>MBW EC 355</b>	54	69	3050	2920	2790	2470	2080	1350							
<b>MBD EC 355 A</b>	66	78	5000	4890	4830	4680	4550	4380	4240	4045	4100	3530	2914		
<b>MBD EC 355 B</b>	68	82	5600	5520	5450	5255	5130	4940	4770	4640	4470	4300	3850	2210	
<b>MBD EC 400 A</b>	68	80	5000	4890	4760	4565	4370	4130	3870	3520	3050	2200			
<b>MBD EC 400 B</b>	72	85	6550	6475	6400	6300	6160	6000	5800	5550	5350	5100	4550	2525	

Type	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V} \text{ m}^3/\text{h}$ in relation to static pressure												
	$L_{\text{PA}}$ dB(A)	$L_{\text{PA}}$ dB(A)	$(\Delta P_{\text{ia}})$ in Pa												
	at 1 m	at 1 m	0	50	100	200	300	400	500	600	700	800	1000	1500	2000
<b>MBD 160/4 Ex</b>	48	64	960	850	730										
<b>MBD 160/2 Ex</b>	63	79	2020	1970	1920	1820	1700	1570	1420	1270	1110				
<b>MBD 180/4 Ex</b>	51	67	1390	1290	1180	860									
<b>MBD 200/4 Ex</b>	54	70	*	*	1840	1530	1080								
<b>MBW 225/2</b>	52	64	1170	1130	1090	1010	920	800	640	370					
<b>MBD 225/2/2</b>	52	65	1170	1130	1090	1000	900	790	650	310					
<b>MBD 225/4 Ex</b>	56	74	*	2720	2570	2250	1840	940							
<b>MBW 250/2</b>	55	68	1620	1580	1530	1430	1320	1200	1040	850	510				
<b>MBD 250/2/2</b>	56	68	1590	1550	1510	1430	1330	1210	1050	860	250				
<b>MBD 250/4 Ex</b>	62	78	4130	3990	3840	3520	3150	2670	1950						
<b>MBD 280/2/2</b>	60	75	2520	2470	2420	2320	2190	2040	1880	1710	1510	1250			
<b>MBD 280/6 Ex</b>	56	72	*	*	3240	2740									
<b>MBD 280/4 Ex</b>	65	81	*	*	*	*	4800	4410	3900	3150					
<b>MBW 315/4</b>	41	61	1950	1820	1640	1270	820								
<b>MBD 315/4/4</b>	41	61	1990	1860	1720	1310	910								
<b>MBD 315/2/2</b>	64	80	3980	3910	3820	3660	3450	3500	3050	2750	2630	2440	2090	800	
<b>MBW 355/4</b>	43	60	2810	2660	2520	2070	1630	1140							
<b>MBD 355/4/4</b>	42	60	2850	2660	2440	2070	1650	1200							
<b>MBD 355/2/2</b>	68	84	5800	5770	5680	5480	5280	5030	4800	4570	4390	4160	3700	2700	
<b>MBW 400/4</b>	48	70	3550	3360	3170	2800	2470	2090	1640	750					
<b>MBD 400/4/4</b>	50	69	3440	3290	3140	2800	2460	2100	1630	720					
<b>MBD 400/2/2</b>	74	90	7500	7380	7270	7070	6830	6660	6480	6310	6130	5990	5610	4730	3500

\* Consider necessary minimum system resistance.

**MB EC**



**Casing**

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibre-board. Swing out motor and impeller unit, fixed with robust die-cast 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**

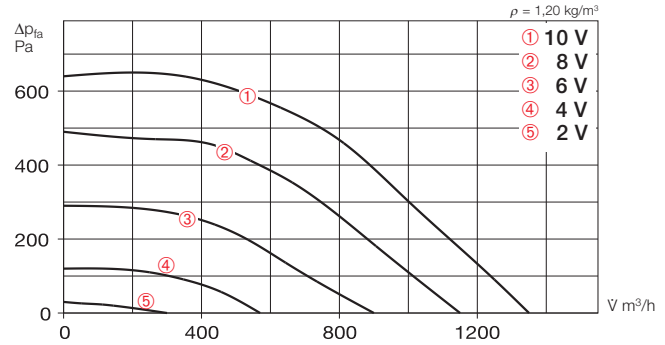
Standard terminal box (IP 55) is mounted with a permanently attached cable.

**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.

**MBW EC 225**

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	63	47	50	52	58	57	51	41
L <sub>WA</sub> Intake	dB(A)	74	52	65	70	68	65	64	62
L <sub>WA</sub> Exhaust	dB(A)	77	53	64	73	67	70	66	61



Voltage V	n min <sup>-1</sup>	Free discharge				
		V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m³/s
10	3000	1350	230	1.00	55	0.61
8	2600	1150	150	0.68	52	0.47
6	2000	900	90	0.42	47	0.34
4	1300	570	50	0.27	38	0.25

**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).

**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

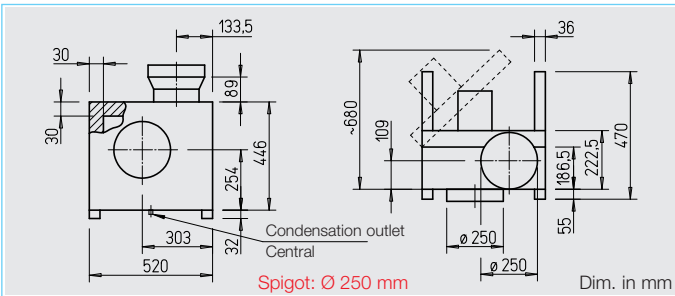
**Flexible sleeve** for installation between fan and ducting.  
- max. temperature +70 °C  
**Type FM 200** No. 1670  
- max. temperature +120 °C  
**Type FM 200 T120** No. 1654

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

Type	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	Speed-potentiometer surface
		mm	V̇ m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
<b>1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55</b>													
<b>MBW EC 225</b>	5842	200	1350	3000	55	0.27	1.20	985	100	25	<b>EUR EC</b> <sup>1)2)</sup> 1347	<b>PU 10</b> <sup>1)</sup> 1734	<b>PA 10</b> <sup>1)</sup> 1735

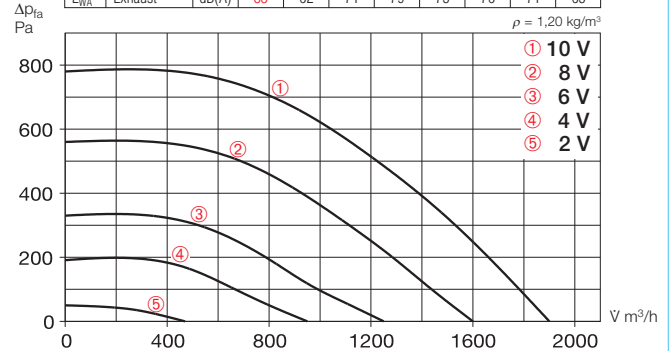
1) several EC fans can normally be connected 2) alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories

### MB EC



### MBW EC 250

Frequency	Hz	total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	64	43	52	60	56	57	52	46
L <sub>WA</sub> Intake	dB(A)	81	62	72	77	75	72	71	66
L <sub>WA</sub> Exhaust	dB(A)	83	62	71	79	75	76	71	65



Voltage V	Free discharge					
	n min <sup>-1</sup>	V̇ m³/h	P W	I A	Lp dB(A)	SFP kW/m²/s
10	3000	1900	310	1,3	56	0,59
8	2600	1600	200	0,90	51	0,45
6	2000	1250	110	0,51	47	0,32
4	1500	950	70	0,4	42	0,25

EC box fans

#### □ Casing

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibre-board. Swing out motor and impeller unit, fixed with robust die-cast 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 control-lable 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.

#### ■ 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 EC250** No. 5526

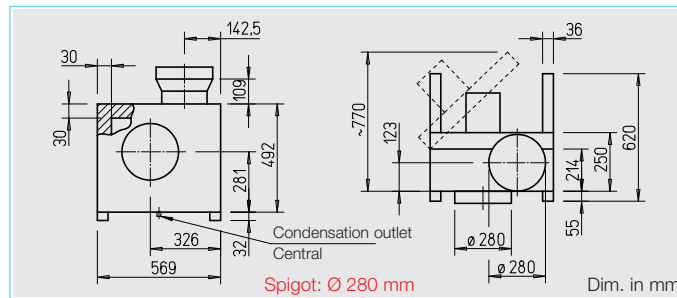
**Rain repellent roof** from galv. sheet steel, mounting above the motor.  
**Type MB-WSD EC250** No. 1856

**Flexible sleeve** for installation between fan and ducting.  
 – max. temperature +70 °C  
**Type FM 250** No. 1672  
 – max. temperature +120 °C  
**Type FM 250 T120** No. 1655

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

Type	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	Speed-potentiometer surface
		mm	V m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	No.	+ °C	kg	Type Ref. no.	Type Ref. no.	Type Ref. no.
<b>1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55</b>													
<b>MBW EC 250</b>	5843	250	1900	3000	56	0.38	1.70	985	100	28.0	<b>EUR EC</b> 1) 2) 1347	<b>PU 10</b> 1) 1734	<b>PA 10</b> 1) 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



**Casing**

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibre-board. Swing out motor and impeller unit, fixed with robust die-cast 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

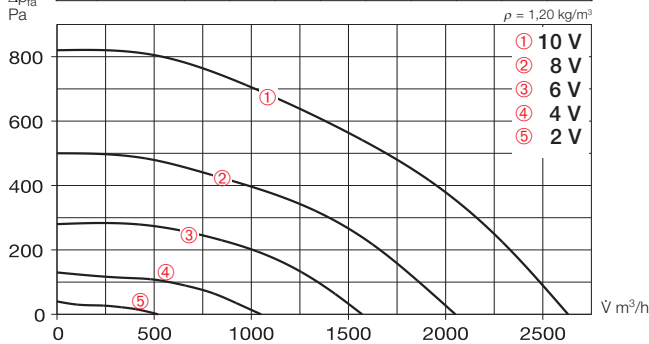
In the table below as well as underneath the performance curve you can find additionally the sound pressure level at 1 m (free field conditions).

Type	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			
											Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55</b>																
<b>MBW EC 280</b>	5850	280	2630	2450	56	0.48	2.10	985	100	33.0	<b>EUR EC</b> <sup>1)2)</sup>	1347	<b>PU 10</b> <sup>1)</sup>	1734	<b>PA 10</b> <sup>1)</sup>	1735
<b>3 ph. motor 3~, 400 V, 50/60 Hz, EC motor, protection to IP 55</b>																
<b>MBD EC 280</b>	5845	280	3000	3000	58	0.75	1.40	988	120	34.0	<b>EUR EC</b> <sup>1)2)</sup>	1347	<b>PU 10</b> <sup>1)</sup>	1734	<b>PA 10</b> <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

### MBW EC 280

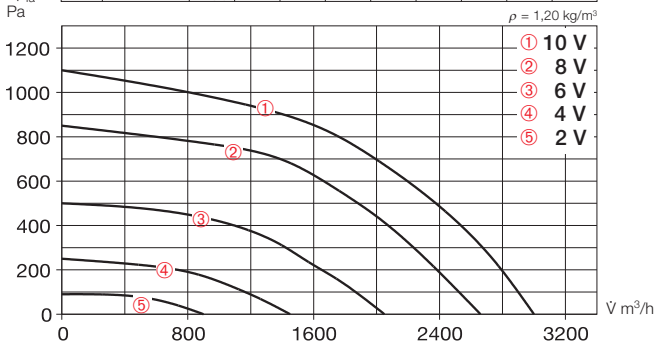
Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	64	51	60	57	53	56	52	47
L <sub>WA</sub> Intake	dB(A)	79	57	74	73	69	68	70	65
L <sub>WA</sub> Exhaust	dB(A)	83	59	77	78	73	74	71	66



Free discharge						
Voltage V	n min <sup>-1</sup>	V̇ m <sup>3</sup> /h	P W	I A	Lp dB(A)	SFP kW/m <sup>2</sup> /s
10	2450	2630	430	1,90	56	0,59
8	2000	2050	220	0,95	52	0,39
6	1500	1570	100	0,42	46	0,23
4	1000	1030	40	0,2	40	0,14

### MBD EC 280

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	66	56	59	61	54	56	52	42
L <sub>WA</sub> Intake	dB(A)	83	63	73	81	76	73	73	70
L <sub>WA</sub> Exhaust	dB(A)	88	66	78	87	79	79	70	70



Free discharge						
Voltage V	n min <sup>-1</sup>	V̇ m <sup>3</sup> /h	P W	I A	Lp dB(A)	SFP kW/m <sup>2</sup> /s
10	3000	3000	620	1,2	58	0,75
8	2600	2660	450	0,9	55	0,61
6	2000	2050	230	0,5	50	0,41
4	1400	1450	100	0,3	43	0,25

### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel.

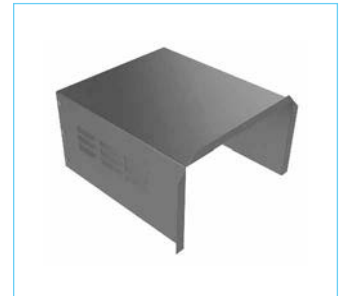
**Type MB-WK EC280** No. 5527



#### 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

**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 10** Ref. no. 1734

for flush mounted installation.

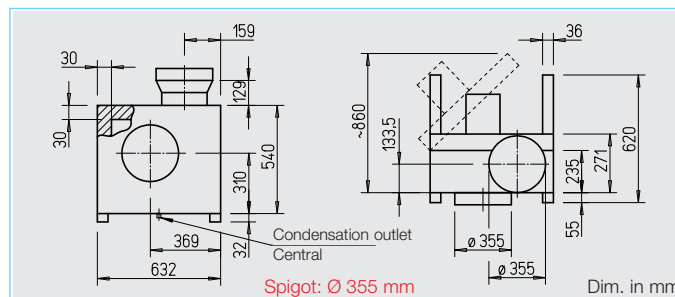
**Type PA 10** Ref. no. 1735

for surface mounted installation.



### Accessory details Page

Universal control system, electronic controller, speed-potentiometer 539 on



**Casing**

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibre-board. Swing out motor and impeller unit, fixed with robust die-cast 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:

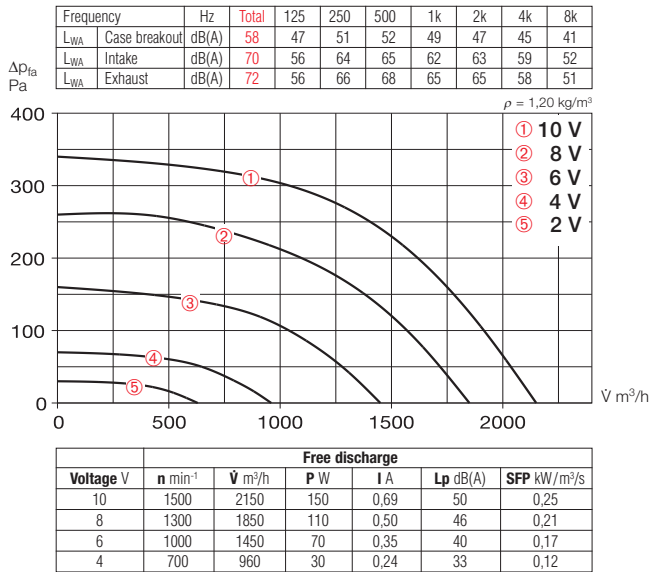
- Sound level case breakout
- Sound level intake
- Sound level exhaust

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).

Type	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			
											Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55</b>																
MBW EC 315	5852	355	2150	1500	50	0.20	0.85	985	100	43.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
<b>3 ph. motor 3~, 400 V, 50/60 Hz, EC motor, protection to IP 55</b>																
MBD EC 315 A	5851	355	3400	2400	59	0.72	1.30	988	120	44.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 315 B	5846	355	4200	3000	65	1.38	2.20	988	120	50.0	EUR EC <sup>1)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

### MBW EC 315



### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel.

**Type MB-WK EC315** No. 5527



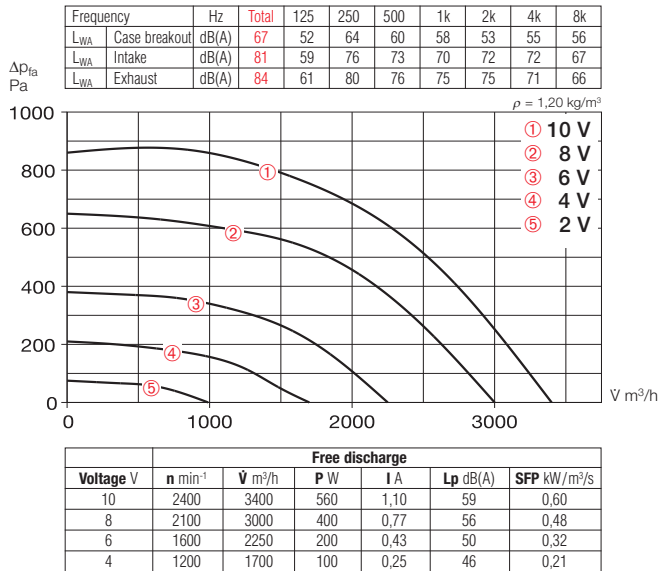
#### Rain repellent roof

For protected outdoor installation. Made from galvanised sheet steel, Mounted above motor.

**Type MB-WSD EC315** No. 1865



### MBD EC 315 A



#### Flexible sleeve

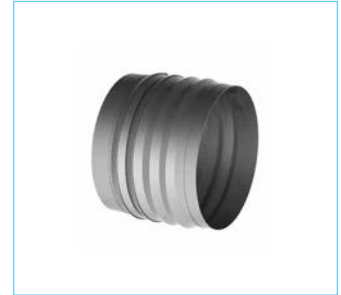
Supplied with two hose clips as standard; for installation between fan and duct system. Prevents sound and vibration transmission to ducting and corrects small site misalignments.

– max. temperature +70 °C

**Type FM 355** No. 1675

– max. temperature +120 °C

**Type FM 355 T120** No. 1658



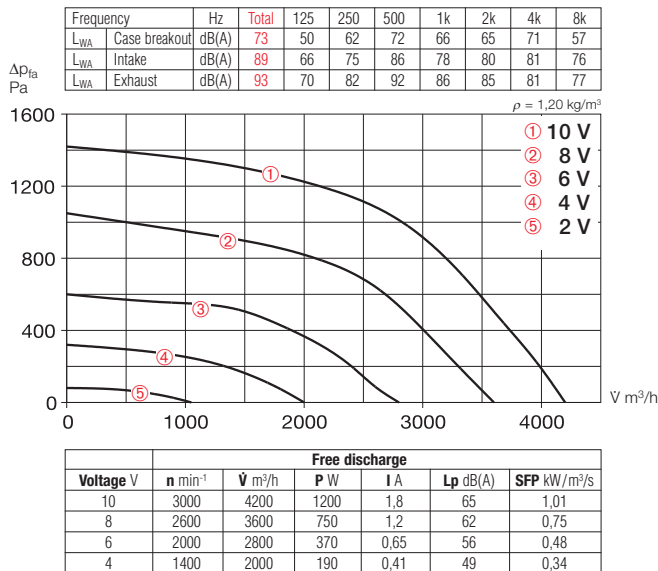
#### Universal control system

**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.



### MBD EC 315 B



#### Speed-potentiometer

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

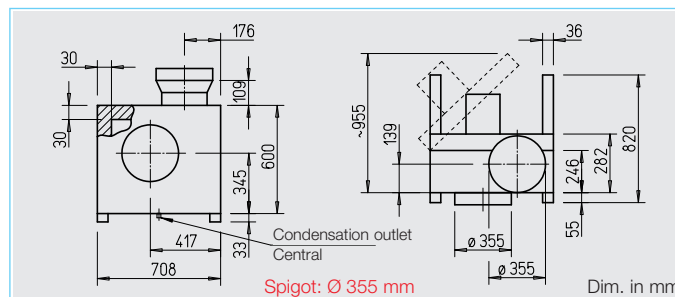
**Type PU 10** Ref. no. 1734 for flush mounted installation.

**Type PA 10** Ref. no. 1735 for surface mounted installation.



### Accessory details Page

Universal control system, electronic controller, speed-potentiometer 539 on



**Casing**

Acoustically lined double skinned galvanised steel casing with 30 mm thick mineral fibre-board. Swing out motor and impeller unit, fixed with robust die-cast 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:

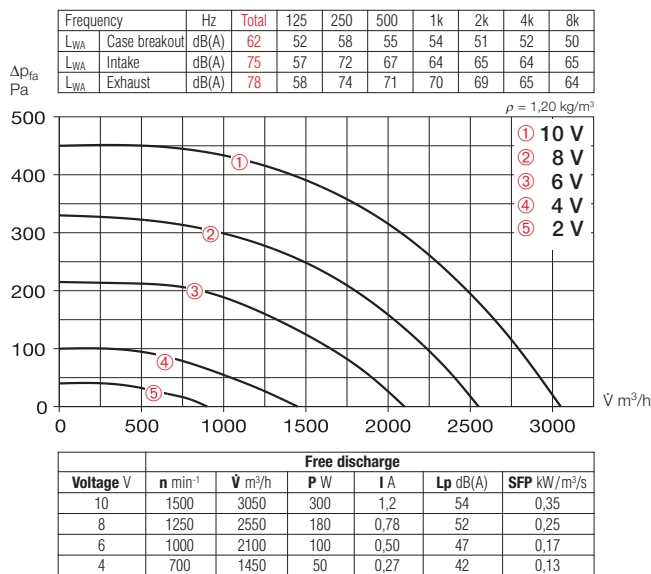
- Sound level case breakout
- Sound level intake
- Sound level exhaust

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).

Type	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			
											Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>1 ph. motor, 1~, 230 V, 50/60 Hz, EC motor, protection to IP 55</b>																
MBW EC 355	5854	355	3050	1500	54	0.33	1.50	985	100	50.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
<b>3 ph. motor 3~, 400 V, 50/60 Hz, EC motor, protection to IP 55</b>																
MBD EC 355 A	5853	355	5000	2500	66	1.45	2.20	988	120	56.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 355 B	5847	355	5600	2800	68	1.90	3.10	988	120	63.0	EUR EC <sup>1)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

### MBW EC 355



### Accessories

#### Wall bracket

Bracket for wall installation, from galvanised sheet steel.

**Type MB-WK EC355** No. 5528



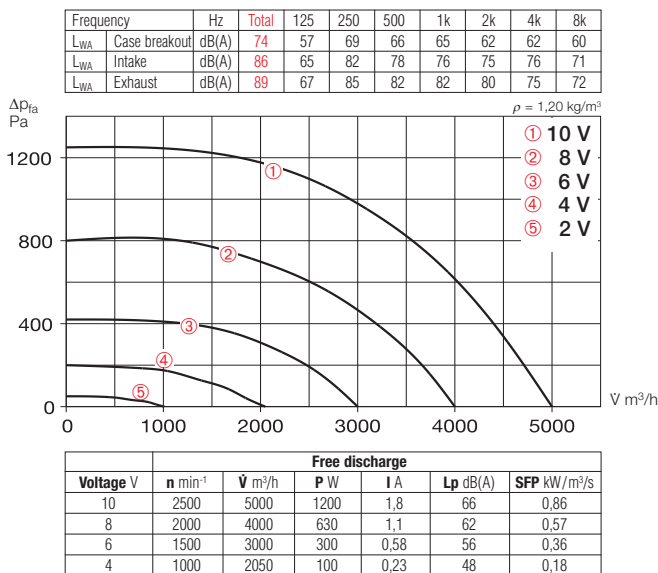
#### Rain repellent roof

For protected outdoor installation. Made from galvanised sheet steel. Mounted above motor.

**Type MB-WSD EC355** No. 1865



### MBD EC 355 A



#### 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 355** No. 1675

– max. temperature +120 °C

**Type FM 355 T120** No. 1658



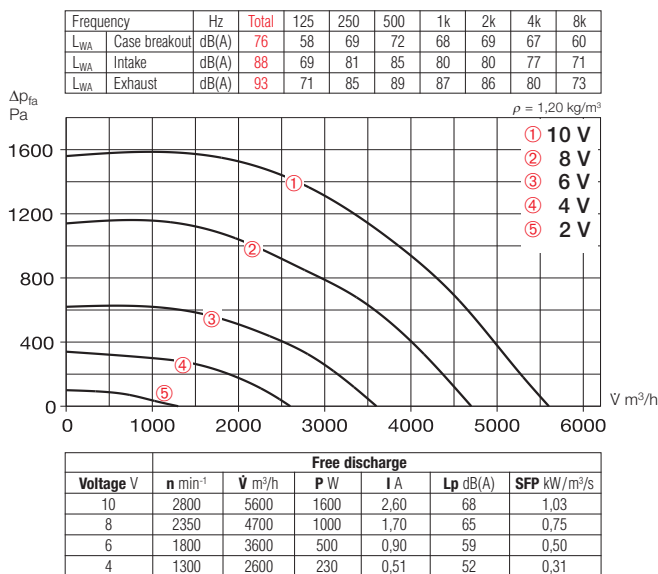
#### Universal control system

**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.



### MBD EC 355 B



#### Speed-potentiometer

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

**Type PU 10** Ref. no. 1734

for flush mounted installation.

**Type PA 10** Ref. no. 1735

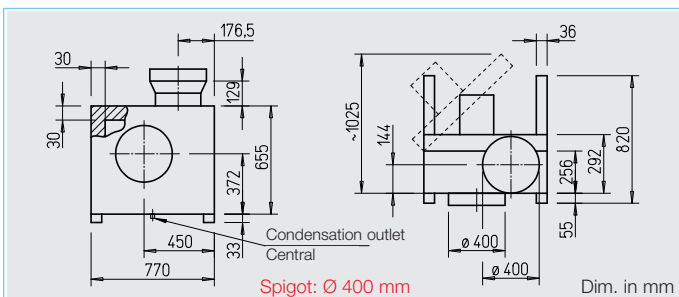
for surface mounted installation.



### Accessory details Page

Universal control system, electronic controller, speed-potentiometer 539 on

**MB EC**



**Casing**

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

**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**

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

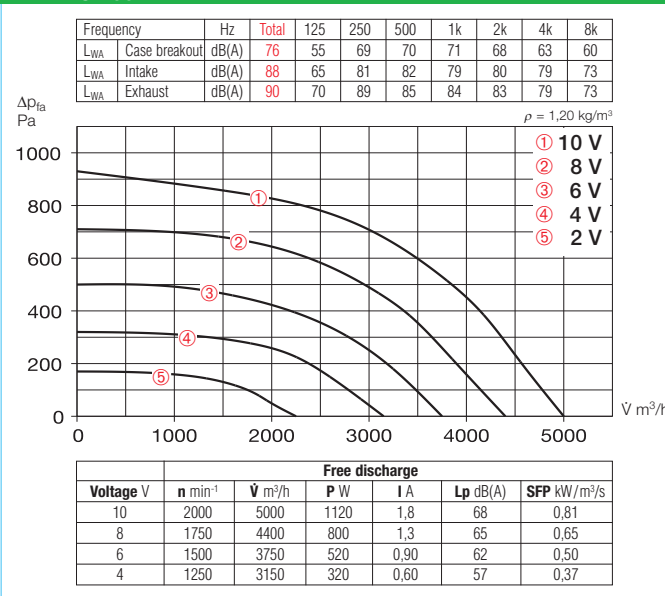
**Rain repellent roof**

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

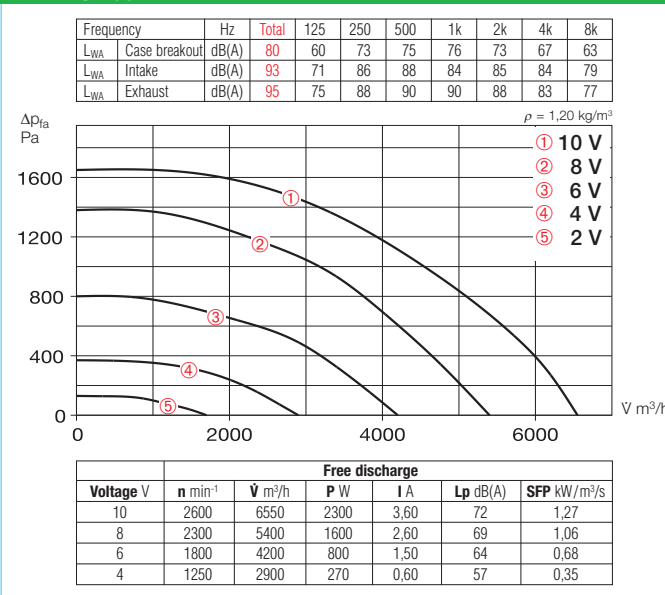
**Flexible sleeve**

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**

**MBD EC 400 A**



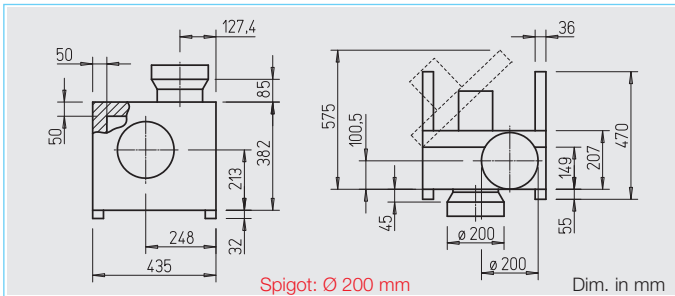
**MBD EC 400 B**



Type	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		Speed-potentiometer surface	
											Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>3 ph. motor 3~, 400 V, 50/60 Hz, EC motor, protection to IP 55</b>																
MBD EC 400 A	5855	400	5000	2000	68	1.30	2.00	988	120	65.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735
MBD EC 400 B	5848	400	6550	2600	72	2.65	4.10	988	120	72.0	EUR EC <sup>1)2)</sup>	1347	PU 10 <sup>1)</sup>	1734	PA 10 <sup>1)</sup>	1735

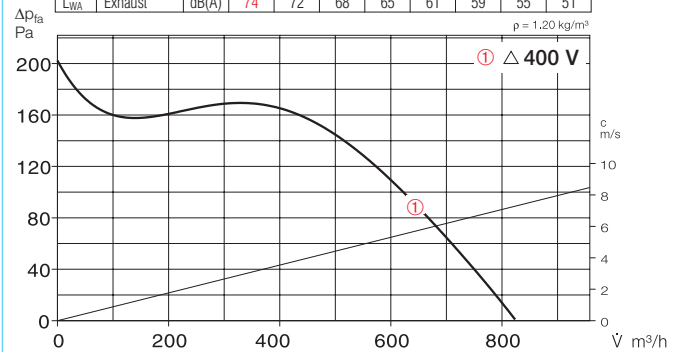
<sup>1)</sup> several EC fans can normally be connected <sup>2)</sup> alternative electronic differential pressure/temp. controller (EDR/ETR, No. 1437/1438) or three-step speed controller (SU/SA, No. 4266/4267), see accessories

### MB Ex



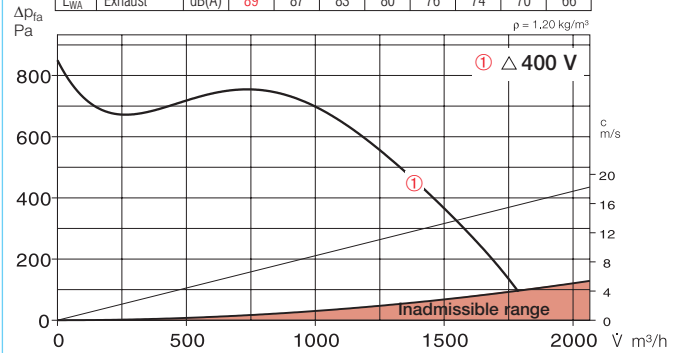
### MBD 160/4 Ex

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	54	52	48	45	41	39	35	31
L <sub>WA</sub> Intake	dB(A)	72	70	66	63	59	57	53	49
L <sub>WA</sub> Exhaust	dB(A)	74	72	68	65	61	59	55	51



### MBD 160/2 Ex

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	69	67	63	60	56	54	50	46
L <sub>WA</sub> Intake	dB(A)	87	85	81	78	74	72	68	64
L <sub>WA</sub> Exhaust	dB(A)	89	87	83	80	76	74	70	66



#### 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

##### Wall bracket

rom galvanised sheet steel.

**Type MB-WK 160** No. 5526

##### Rain repellent roof

Made from galvanised sheet 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

Techn. description, selection chart

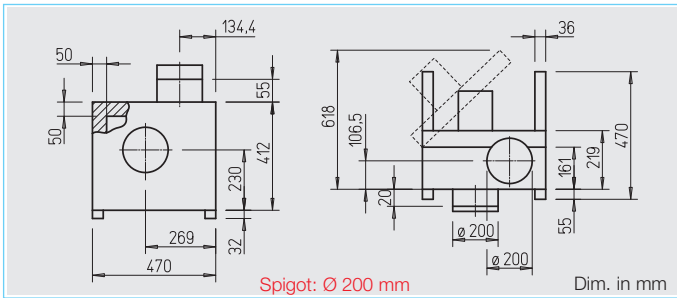
#### Page

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Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer with full motor protect.	speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.			
		V̇ m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	A	No.	+°C	+°C	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55</b>																
MBD 160/4 Ex	6001	970	1370	48	0.37	1.08	—	470	40	—	25.0	not permitted	not permitted	—	—	—
MBD 160/2 Ex	6002	2020	2840	63	1.50	3.15	—	470	40	—	34.0	not permitted	not permitted	—	—	—

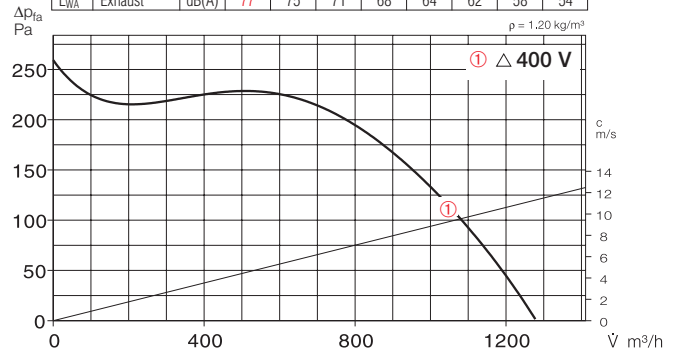
\* For Ex-types: Motor rated values, see Information p. 16

**MB Ex**



**MBD 180/4 Ex**

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k	
L <sub>WA</sub>	Case breakout	dB(A)	57	55	51	58	44	42	38	34
L <sub>WA</sub>	Intake	dB(A)	75	73	69	66	62	60	56	52
L <sub>WA</sub>	Exhaust	dB(A)	77	75	71	68	64	62	58	54



**Casing**

Acoustically lined double skinned galvanised steel casing with 50 mm thick mineral fibre-board. 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**

**Wall bracket**

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

**Rain repellent roof**

Made from galvanised sheet steel, Mounted above motor.  
**Type MB-WSD** No. 1856

**Flexible sleeve**

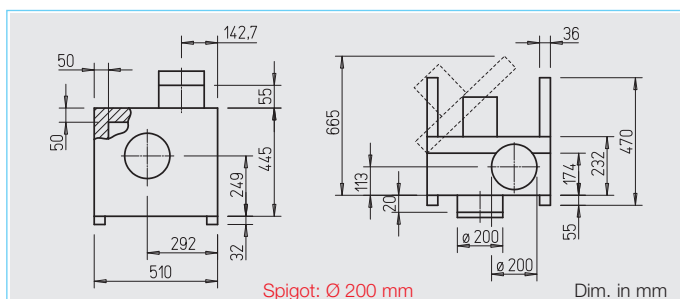
for installation between fan and duct system.  
**Type FM 200 Ex** No. 1686

Information	Page
Techn. description, selection chart	264 on

Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer speed controller with full motor protect.	5-step transformer speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.			
		V̇ m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	A	No.	+°C	+°C	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55</b>																
<b>MBD 180/4 Ex</b>	6004	1370	1420	51	0.37	1.08	—	470	40	—	29.0	not permitted	not permitted	—	—	—

\* For Ex-types: Motor rated values, see Information p. 16

### MB Ex



#### □ Casing

Acoustically lined double skinned galvanised steel casing with 50 mm thick mineral fibre-board. 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

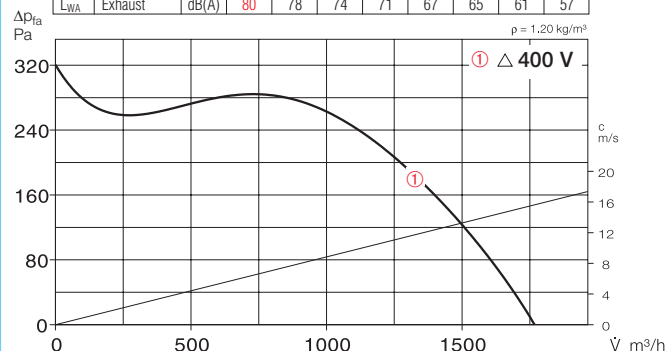
Through maintenance-free IEC flange motor protected to IP 55. Ball bearing mounted, interference-free.

#### □ Electrical connection

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

### MBD 200/4 Ex

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	60	58	54	51	47	45	41	37
L <sub>WA</sub> Intake	dB(A)	78	76	72	69	65	63	59	55
L <sub>WA</sub> Exhaust	dB(A)	80	78	74	71	67	65	61	57



#### ■ Accessories

##### Wall bracket

rom galvanised sheet steel.

**Type MB-WK 200** No. 5526

##### Rain repellent roof

Made from galvanised sheet 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

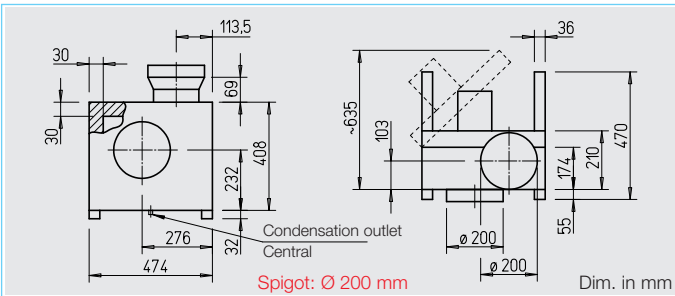
Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer with full motor protect.	speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.			
		V m <sup>3</sup> /h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	A	No.	+°C	+°C	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55</b>																
MBD 200/4 Ex	6008	1840	1430	54	0.55	1.36	—	470	40	—	35.0	not permitted	not permitted	—	—	—

\* For Ex-types: Motor rated values, see Information p. 16

**MB**

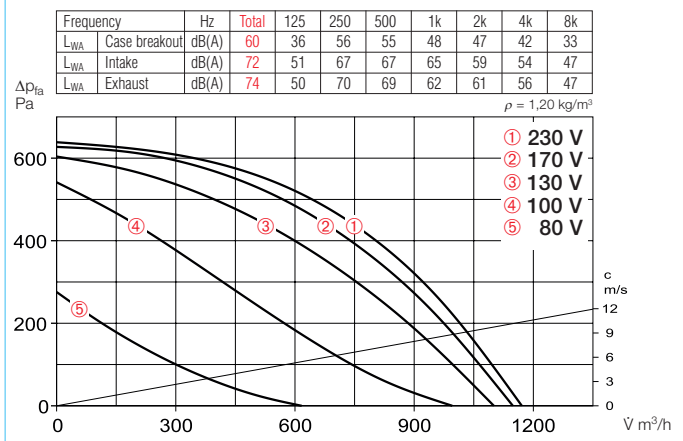


(Fig. similar)

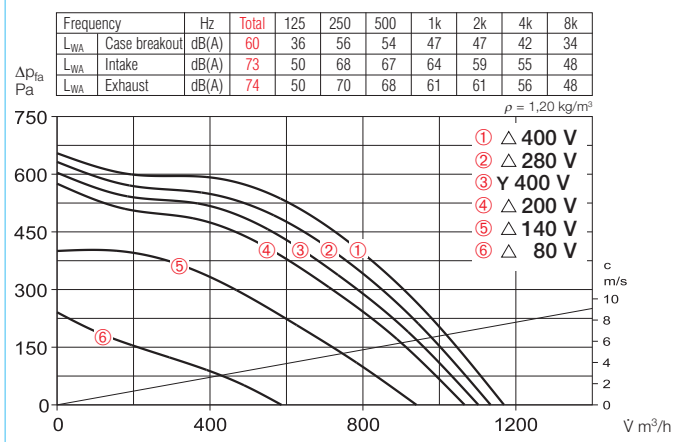


- Casing**  
See page 264.
- Impeller**  
Forward curved high-performance centrifugal impeller made from aluminium and forward curved made from galvanised steel for ex-proof types. Together with the dynamically balanced motor. High efficiency, low noise, aerodynamically optimised volute casing.
- Motor**  
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 EC225** No. 5526
  - Wall bracket for Ex-types**  
**Type MB-WK 225** No. 5527
  - Rain repellent roof from galv. sheet steel.** Mounted above motor.  
**Type MB-WSD** No. 1856

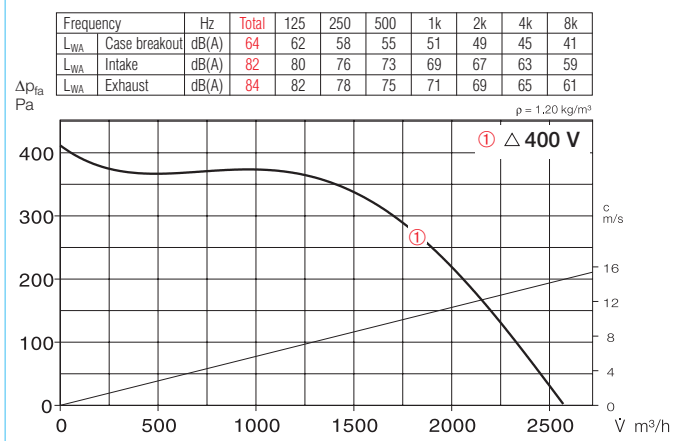
**MBW 225/2**



**MBD 225/2/2**



**MBD 225/4 Ex**



- 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 two-speed Y/Δ switchable three phase fans.  
**Type DS 2<sup>3)</sup>** Ref. no. 1351

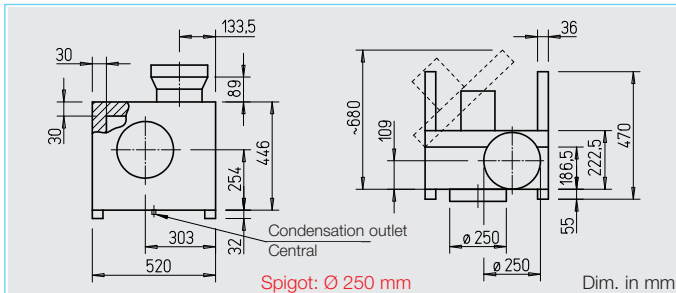
Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer with full motor protect.	speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.			
		$\text{m}^3/\text{h}$	$\text{min}^{-1}$	dB(A) in 1 m	kW	A	A	No.	+°C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
<b>1 ph. motor, 230 V, 50 Hz, capacitor motor, protection to IP 55</b>																
MBW 225/2	6456	1170	2900	52	0.21	1.10	1.80	1119	100	60	MWS 3	1948	TSW 3,0	1496	MW <sup>1)</sup>	1579
<b>Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/Δ wiring, protection to IP 55</b>																
MBD 225/2/2	6457	1100/1170	2675/2885	49/52	0.16/0.20	0.29/0.57	0.57	520	100	60	RDS 1	1314	TSD 0,8 <sup>3)</sup>	1500	M4 <sup>2)</sup>	1571
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55</b>																
MBD 225/4 Ex <sup>4)</sup>	6011	2770	1390	56	0.75	2.00	—	470	40	—	40	not permitted	not permitted	—	—	—

\* For Ex-types: Motor rated values, see Information p. 16  
 1) incl. operating switch  
 2) incl. operating and speed switch  
 3) necessary full motor protection device: Type MD, No. 5849  
 4) Dimensional drawing on www.HeliosSelect.de

### MB



(Fig. similar)



#### □ 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.

#### □ Speed control

See page 264.

#### ■ Accessories

Wall bracket galv. sheet steel.

**Type MB-WK EC250** No. 5526

Wall bracket for ex-types

**Type MB-WK 250** No. 5527

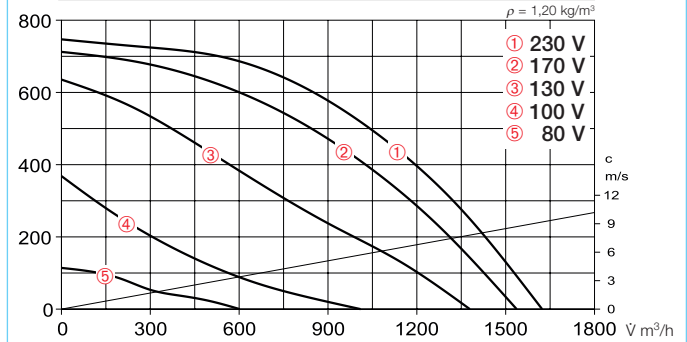
Rain repellent roof from galv.

sheet steel. Mounted above motor.

**Type MB-WSD** No. 1856

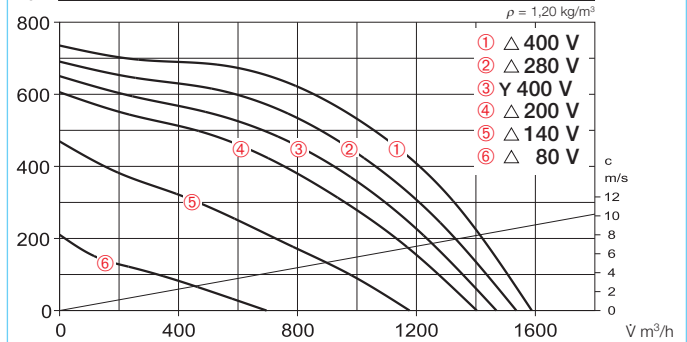
### MBW 250/2

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	63	36	60	55	50	50	44	36
L <sub>WA</sub> Intake	dB(A)	76	52	74	69	67	64	59	55
L <sub>WA</sub> Exhaust	dB(A)	78	51	75	70	65	65	59	51



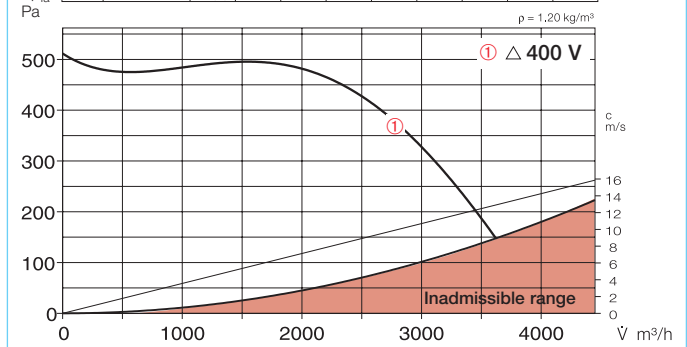
### MBD 250/2/2

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	64	37	60	52	51	50	44	38
L <sub>WA</sub> Intake	dB(A)	76	51	70	69	66	64	60	56
L <sub>WA</sub> Exhaust	dB(A)	78	52	75	72	66	65	59	53



### MBD 250/4 Ex

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	68	66	62	59	55	53	49	45
L <sub>WA</sub> Intake	dB(A)	86	84	80	77	73	71	67	63
L <sub>WA</sub> Exhaust	dB(A)	88	86	82	79	75	73	69	65



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** No. 1690

Speed and on/off switch for two-speed Y/Δ switchable three phase fans.

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

Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer with full motor protect.	speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.				
		V m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	A	No.	+°C	kg	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.	
<b>1 ph. motor, 230 V, 50 Hz, capacitor motor, protection to IP 55</b>																	
MBW 250/2	6458	1620	2840	55	0,30	1.40	2.10	1119	100	60	28.0	MWS 3	1948	TSW 3,0	1496	MW <sup>1)</sup>	1579
<b>Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/Δ wiring, protection to IP 55</b>																	
MBD 250/2/2	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 0,8 <sup>3)</sup>	1500	M4 <sup>2)</sup>	1571
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 400 V, 50 Hz, protection to IP 55</b>																	
MBD 250/4 Ex <sup>4)</sup>	6014	4140	1405	62	1.50	3.35	—	470	40	—	52.0	not permitted	not permitted	—	—	—	—

\* For Ex-types: Motor rated values, see Information p. 16

<sup>1)</sup> incl. operating switch

<sup>2)</sup> incl. operating and speed switch

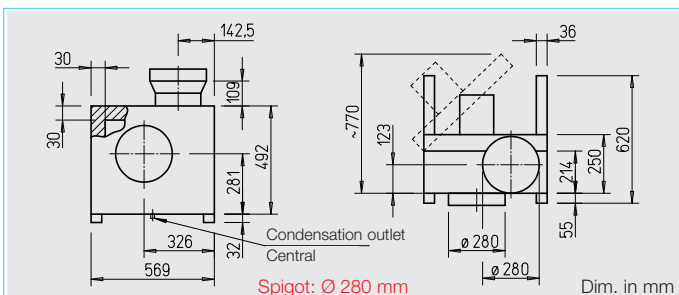
<sup>3)</sup> necessary full motor protection device: Type MD, No. 5849

<sup>4)</sup> Dimensional drawing on www.HeliosSelect.de

**MB**



(Fig. similar)



**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

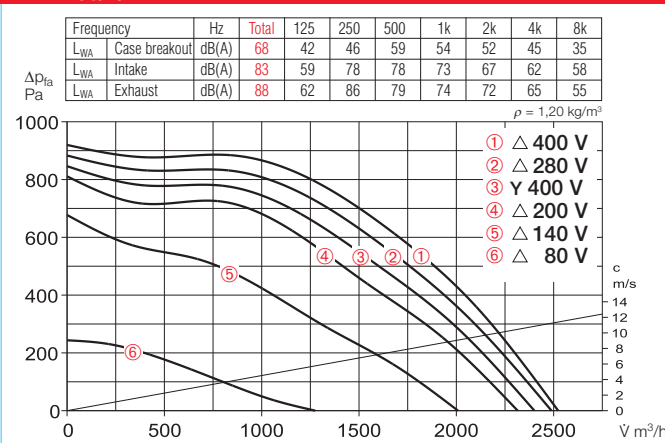
**Wall bracket** for ex-types

**Type MB-WK 280** No. 5527

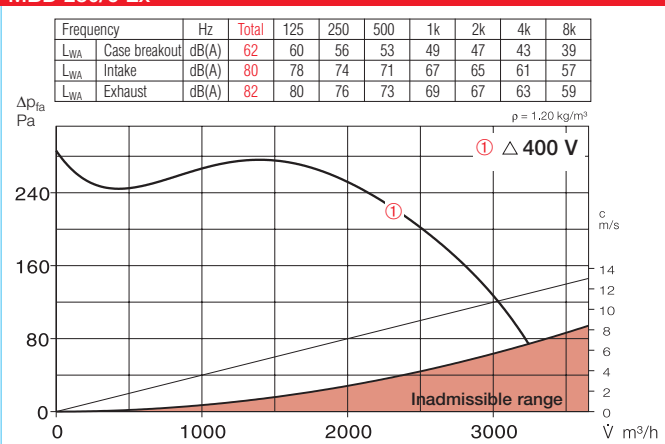
**Rain repellent roof** from galv. sheet steel. Mounted above motor.

**Type MB-WSD** No. 1856

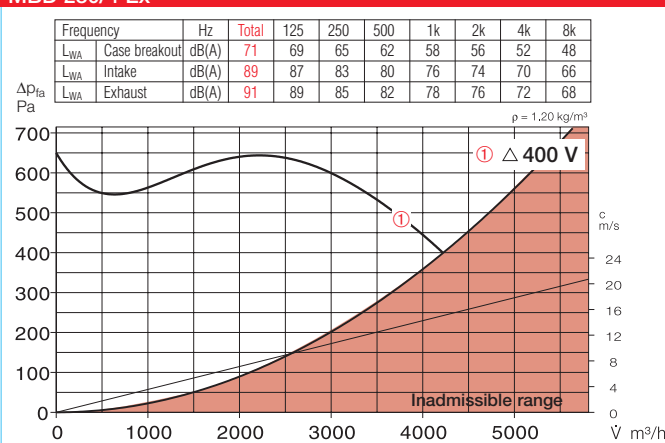
**MBD 280/2/2**



**MBD 280/6 Ex**



**MBD 280/4 Ex**



**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 two-speed Y/Δ switchable three phase fans.

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

Type	Ref. no.	Air flow volume max.	R.P.M.	Sound press. case breakout	Motor power*	Current* full load	Current* speed control	Wiring diagram	max. air flow temperature at full load	Weight net approx.	5-step transformer with full motor protect.	speed controller without full motor protect.	Full motor protect. for connection of built-in therma cont.				
		V m³/h	min <sup>-1</sup>	dB(A) in 1 m	kW	A	A	No.	+°C	+°C	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.	
<b>Two-speed, 3 ph. motor, 400 V, 50 Hz, Y/Δ wiring, protection to IP 55</b>																	
MBD 280/2/2	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	TSD 3,0 <sup>2)</sup>	1502	M4 <sup>1)</sup>	1571
<b>Explosion-proof Ex e II, temp. class T1 – T3, 3 ph. motor 230/400 V, 50 Hz, protection to IP 55</b>																	
MBD 280/6 Ex <sup>3)</sup>	6016	2960	925	56	0.95	2.70	—	498	40	—	60.0	not permitted	not permitted	—	—	—	—
MBD 280/4 Ex <sup>3)</sup>	6017	4960	1420	65	2.00	4.65	—	498	40	—	68.0	not permitted	not permitted	—	—	—	—

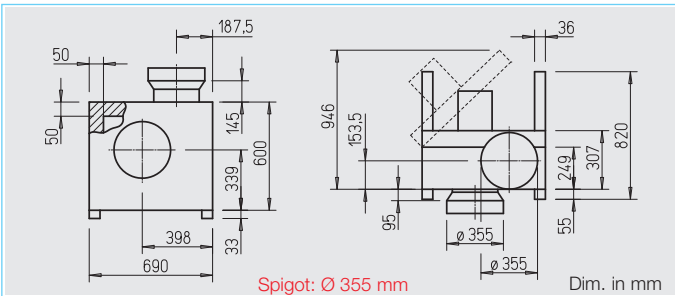
\* For Ex-types: Motor rated values, see Information p. 16

<sup>1)</sup> incl. operating and speed switch

<sup>2)</sup> necessary full motor protection device: Type MD, No. 5849

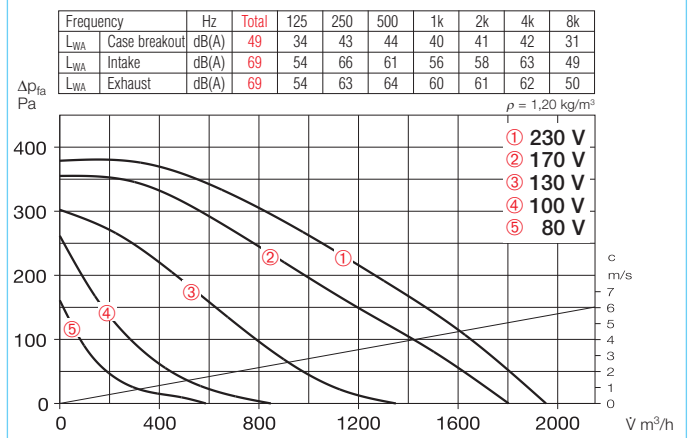
<sup>3)</sup> Dimensional drawing on www.HeliosSelect.de

### MB

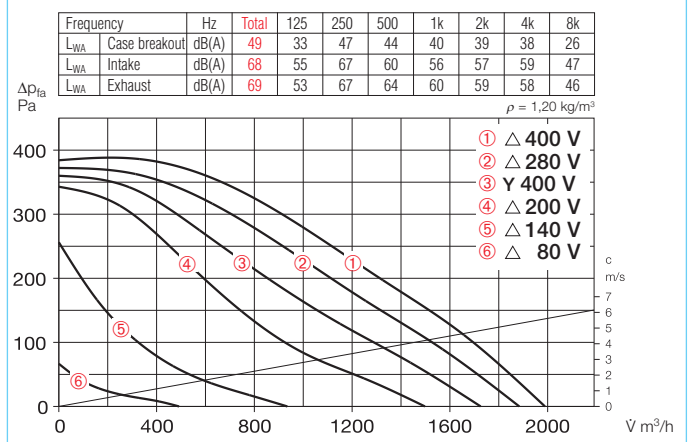


- Casing**  
See page 264.
- Impeller**  
Backward curved high-performance centrifugal impeller made from aluminium, directly mounted to motor shaft. High efficiency, low noise, aerodynamically optimised volute casing. Dynamically balanced according to DIN ISO 1940 T.1 – grade 6.3.
- Motor**  
Through 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~ types can also be operated at two speeds through the Y/Δ 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 315** No. 5528
  - Rain repellent roof** from galv. sheet steel. Mounted above motor.  
**Type MB-WSD** No. 1856

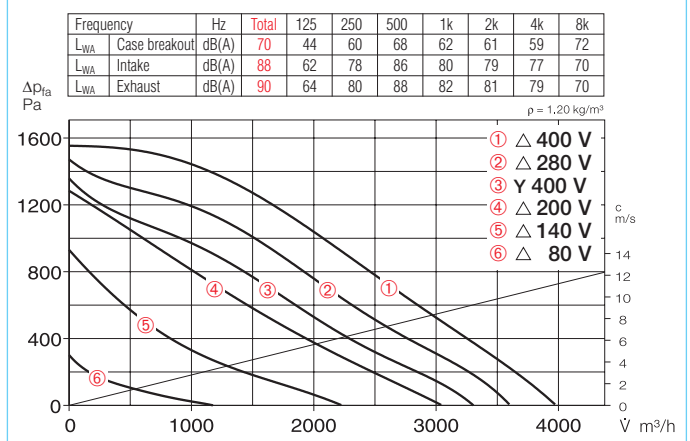
### MBW 315/4



### MBD 315/4/4



### MBD 315/2/2



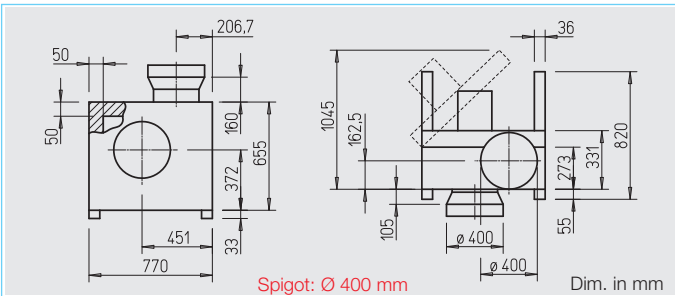
**Flexible sleeve** for installation between fan and duct system.  
**FM 355** (+70 °C) No. 1675  
**FM 355 T120** (+120 °C) No. 1658

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

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

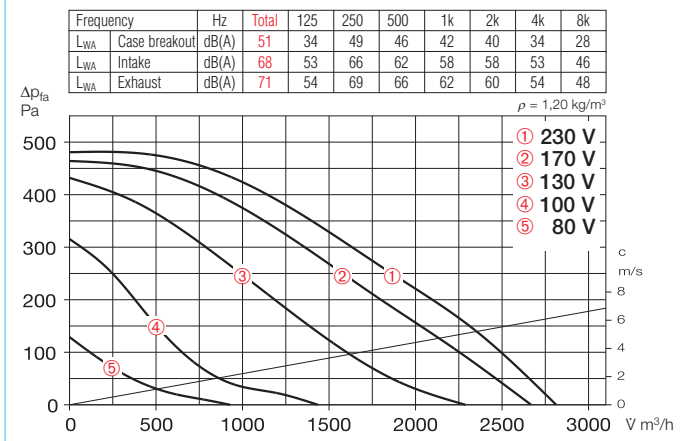
1) incl. operating switch    2) incl. operating and speed switch    3) necessary full motor protection device: Type MD, No. 5849

**MB**

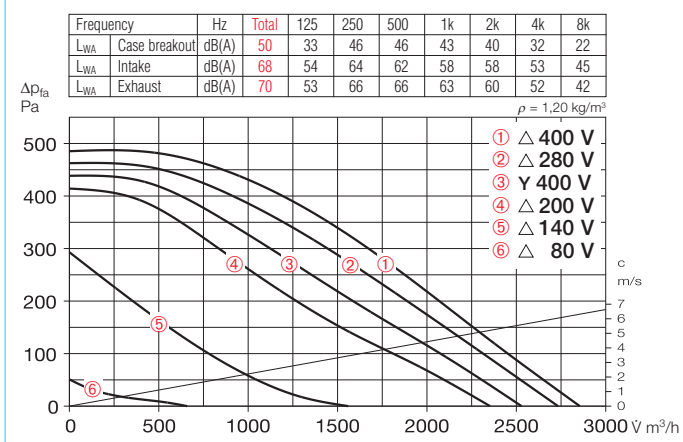


- Casing**  
See page 264.
- Impeller**  
Forward curved high-performance centrifugal impeller made from aluminium, directly mounted to motor shaft. High efficiency, low noise, aerodynamically optimised volute casing. Dynamically balanced according to DIN ISO 1940 T.1 – grade 6.3.
- Motor**  
Through 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 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/Δ 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 355 No. 5528
  - Rain repellent roof** from galv. sheet steel. Mounted above motor.  
Type MB-WSD No. 1856

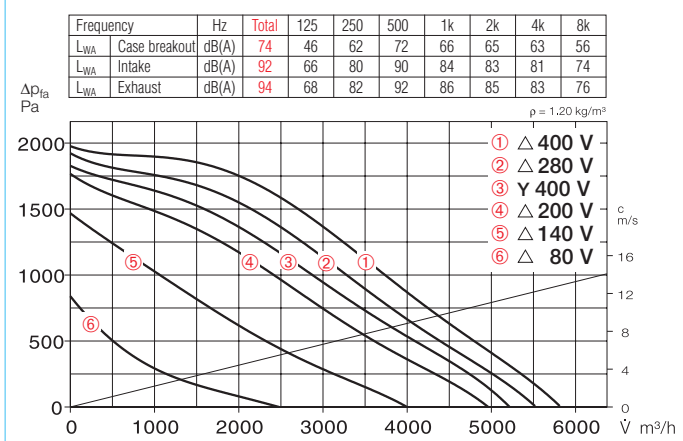
**MBW 355/4**



**MBD 355/4/4**



**MBD 355/2/2**

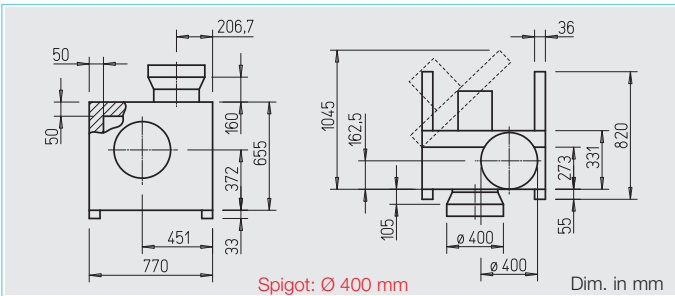


- Flexible sleeve** for installation between fan and duct system.  
FM 400 (+70 °C) No. 1676  
FM 400 T120 (+120 °C) No. 1659
- Speed and on/off switch** for two-speed Y/Δ switchable three phase fans.  
Type DS 2<sup>3)</sup> Ref. no. 1351

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

### MB



#### □ 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/Δ switch or full motor protection device M4. The performance stages are shown in the characteristic curve.

#### ■ Accessories

Wall bracket galv. sheet steel.

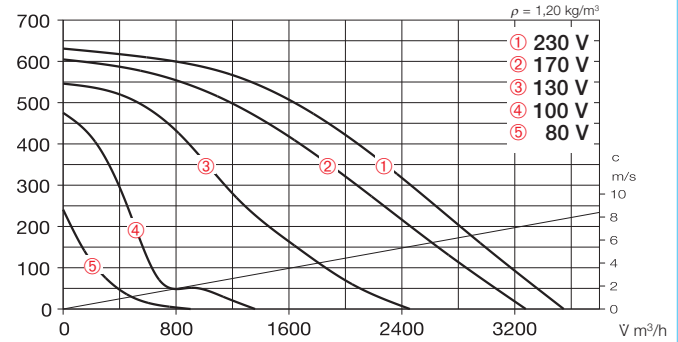
Type MB-WK 400 No. 5528

Rain repellent roof from galv. sheet steel. Mounted above motor.

Type MB-WSD No. 1856

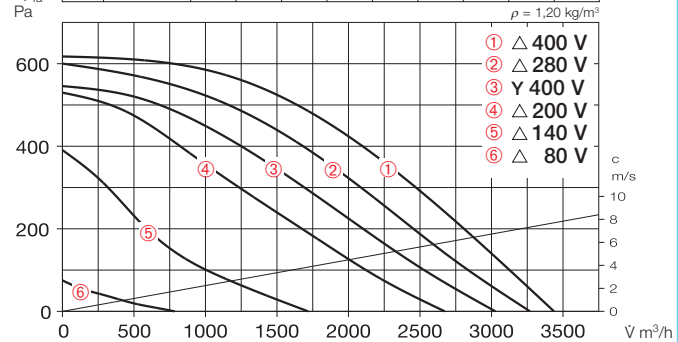
### MBW 400/4

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	56	39	56	50	46	43	44	32
L <sub>WA</sub> Intake	dB(A)	78	61	77	67	69	66	68	56
L <sub>WA</sub> Exhaust	dB(A)	76	59	76	70	66	63	64	52



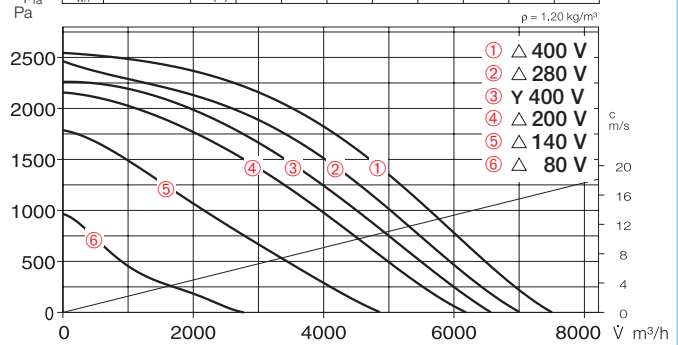
### MBD 400/4/4

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	58	41	57	51	47	46	47	34
L <sub>WA</sub> Intake	dB(A)	77	60	77	64	64	65	68	55
L <sub>WA</sub> Exhaust	dB(A)	78	61	77	71	67	66	67	54



### MBD 400/2/2

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L <sub>WA</sub> Case breakout	dB(A)	80	55	69	79	70	70	67	81
L <sub>WA</sub> Intake	dB(A)	98	73	87	97	88	88	85	79
L <sub>WA</sub> Exhaust	dB(A)	100	75	89	99	90	90	87	79



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 two-speed Y/Δ switchable three phase fans.

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

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

1) incl. operating switch

2) incl. operating and speed switch

3) necessary full motor protection device: Type MD, No. 5849