

mcr PASAT

Radial smoke fans



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Introduction

Fire hazards pose a significant challenge to public safety, both in residential facilities and public buildings. Statistics indicate that the number of fires in buildings is steadily increasing, calling attention to the need for effective solutions to prevent the effects of fire hazards.

In the context of these risks smoke fans, such as the mcr PASAT model, are becoming an important component of fire protection systems. Their main task is to quickly extract smoke and hot air from building interiors, which significantly improves evacuation conditions and increases the effectiveness of rescue operations. Fans not only contribute to protecting human life and health, but also reduce the extent of property damage associated with a fire.

Investment in smoke fans not only contributes to achieving compliance with building and fire regulations, but above all constitutes a safety measure. With fire hazards on the rise, providing adequate ventilation system solutions is becoming essential for any building occupied by people.

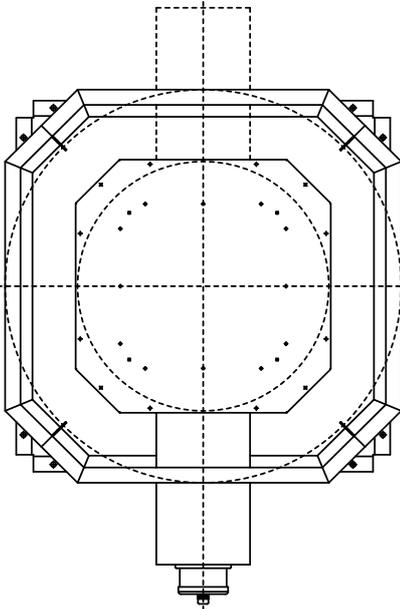
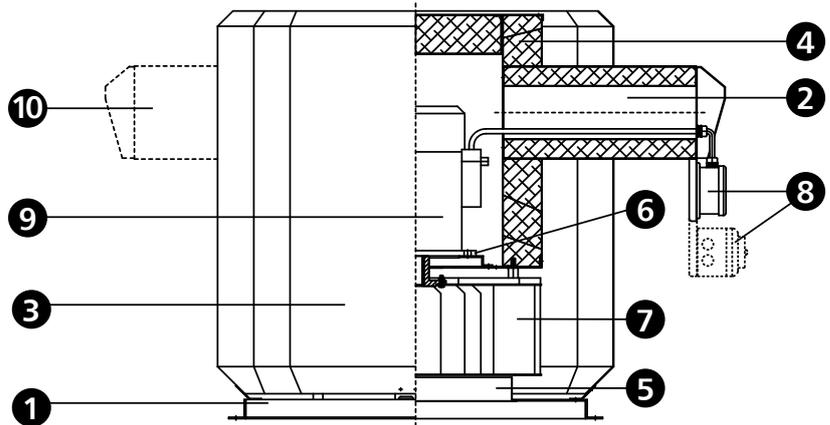
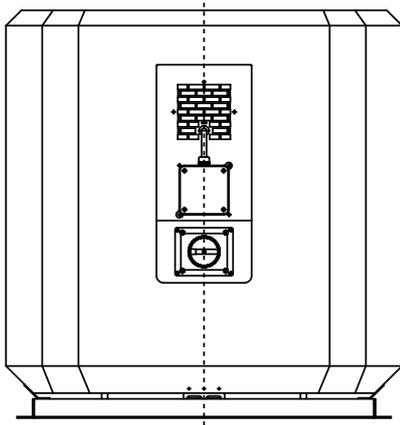
Device Features:

- » F600, F400
- » Certificate of constancy of performance 2434-CPR-0221.
- » Performance characteristics in accordance with EN 12101-3:2015.
- » Patent No. 220478 issued by the Patent Office of the Republic of Poland.
- » 3 nominal sizes.
- » Single-speed and two-speed design for mixed ventilation

APPLICATIONS

mcr Pasat rooftop smoke fans with a radial rotor are dedicated for removing smoke and hot air from rooms during a fire and for providing comfort ventilation. They can be equipped with single-speed or two-speed motors, combining comfort ventilation with fire ventilation functionality, e.g. for ventilation and smoke extraction from underground garages, shopping malls, production floors

DESIGN



1. fan base
2. cooling duct
3. outer casing
4. motor housing
5. inlet nozzle
6. motor base
7. radial rotor
8. electrical connection box/service switch (optional)
9. electric motor
10. additional cooling duct

Smoke fans facilitate the evacuation of people and equipment from rooms where a fire occurs, enable faster and more effective firefighting operations, protect the building structure and its equipment against high temperatures and prevent the spread of fire, fire gases and smoke to adjacent fire zones. These devices are suitable for outdoor operation in a vertical operating position.

The fan casing is made of aluminum or steel sheet, depending on the size of the unit. Fan desi-

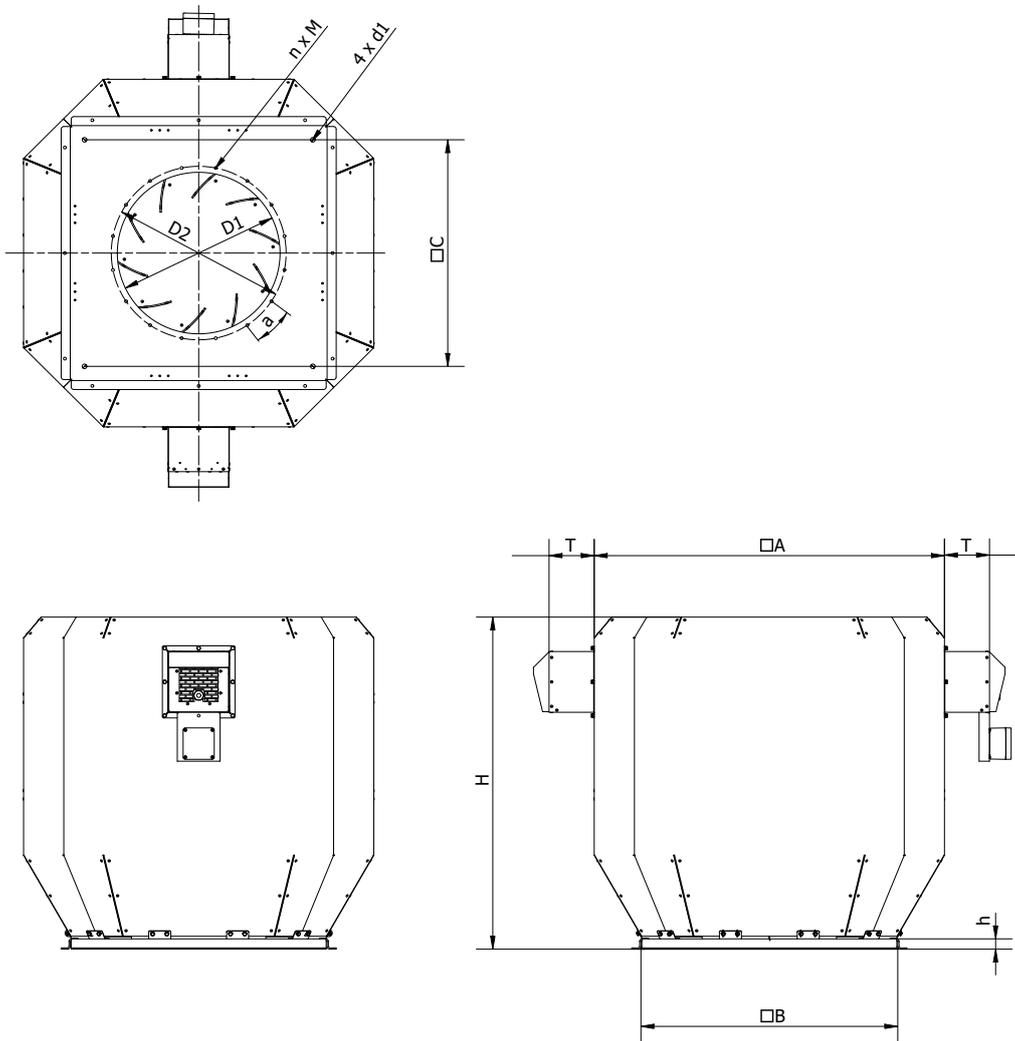
gn allows for precipitation water, melting snow, or condensed water vapor from the intake air to drain from the housing.

The fan uses a class IE2 or IE3 three-phase motor, single-speed [230/400 V (D/Y) or 400/690 V (D/Y)] or two-speed [400/400 V (Y/YY)] with various speeds (3000, 1500, 1000, 750 rpm), normally supplied without thermal protection. The motor is designed to work with an inverter. The radial rotor is seated directly on the motor's journal.

DIMENSIONS

mcr Pasat rooftop smoke fans are available in three dimensions, with a nominal rotor diameter of 500, 630, 710 mm.

Fan	A [mm]	B [mm]	H [mm]	h [mm]	C [mm]	D1 [mm]	D2 [mm]	d1 [mm]	nxM	α [°]	T [mm]
mcr Pasat 50	1,100	1,000	900	40	880	500	541	14.2	12xM8	30.0	185
mcr Pasat 63	1,350	1,000	1300	40	880	630	674	18	16xM10	22.5	255
mcr Pasat 71	1,400	1,160	1300	40	1040	710	751	18	16xM10	22.5	255



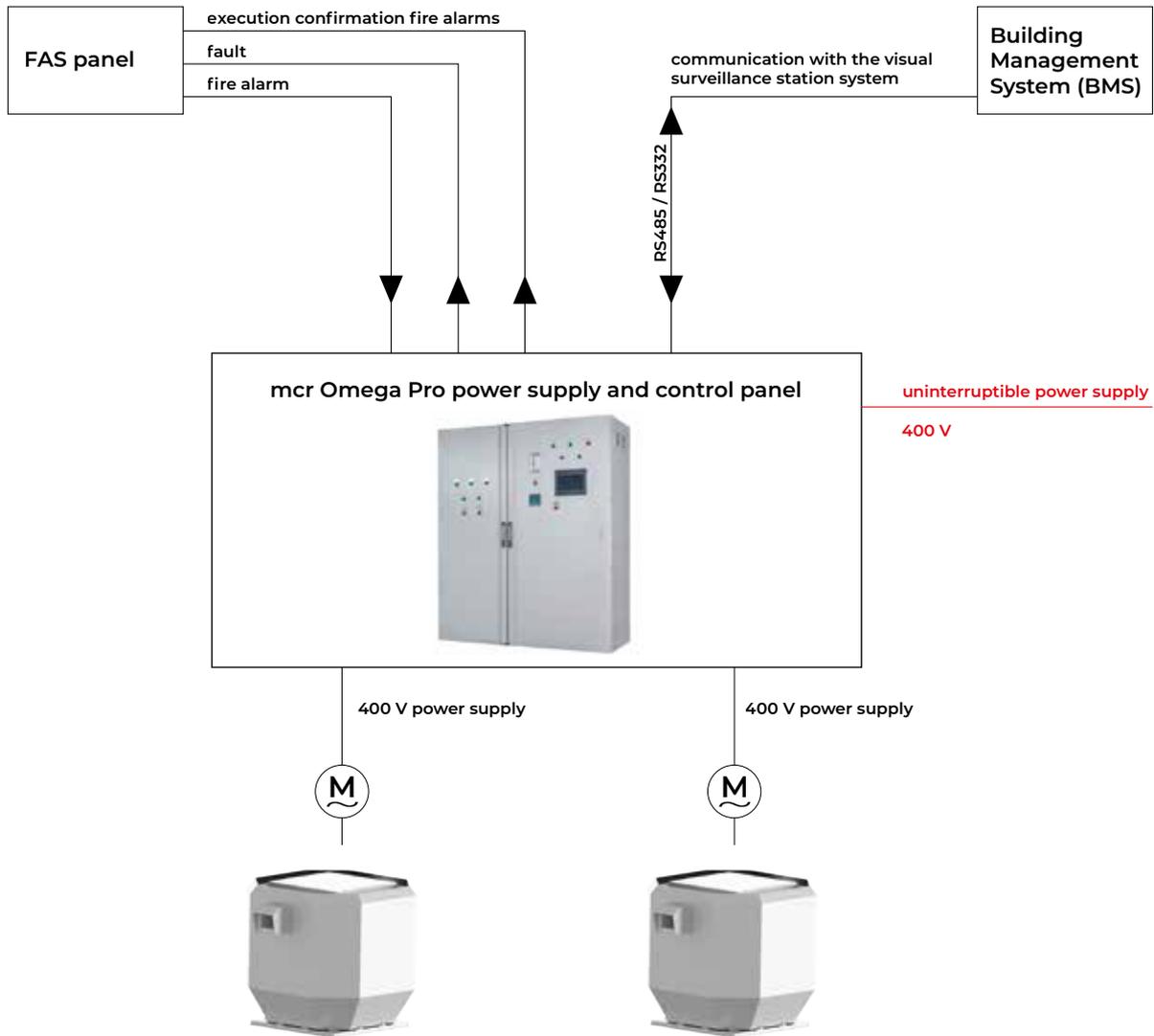
INSTALLATION

Foundation and installation

mcr Pasat fans must be placed outdoors, outside fire zones. Before installing the fan, check the load-bearing capacity of the roof structure on which the unit is to be placed. The fan can be placed on a plinth prepared on site or on a dedicated roof base (PD). If this is required at the facility, the fan can be equipped with a PD-T damping roof base for noise reduction and mitigation.

POWER SUPPLY AND CONTROL

Details and wiring diagrams of the individual fans are included in the dedicated operation and maintenance manual. A certified **mcr Omega Pro** power supply and control panel is recommended for fan power supply and fan operation control.



TECHNICAL AND FLOW PARAMETERS

mcr Pasat fan operating parameters range from 500 m³/h to 52,000 m³/h with pressures up to 1950 Pa.

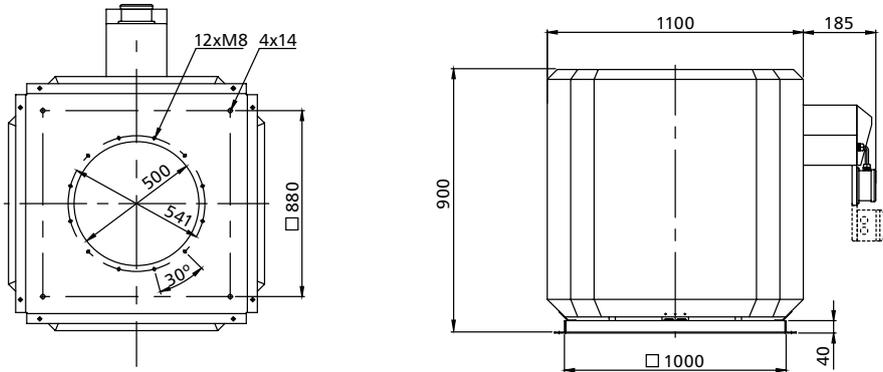
Symbols used in tables and characteristics:

Δp	– external statics pressure [Pa]
Φ	– capacity [m ³ /h]
nr	– characteristics number
P	– motor rated power [kW]
n	– motor rotation [rpm]
Un	– rated voltage
In	– rated current

m1	– F400 fan estimated weight without accessories [kg]
m2	– F600 fan estimated weight without accessories [kg]

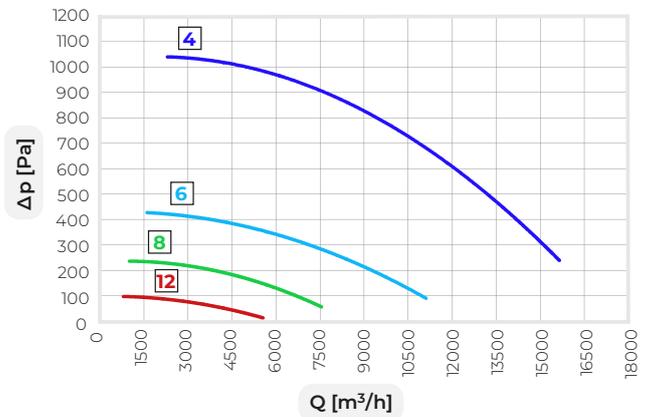
Measurements at a temperature and air density of 1.2 kg/m³.

mcr PASAT 50



mcr PASAT 50

mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
50/4-4	4	4	1500	400	8.2	135	147
50/6-1.1	6	1.1	1000	400	2.85	122	134
50/8-0.75	8	0.75	750	400	2.15	127	139

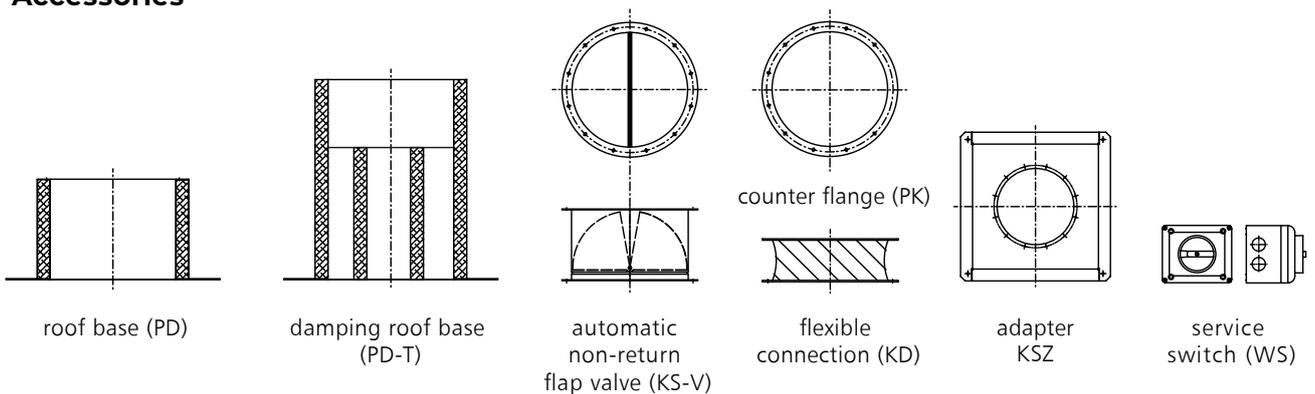


mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
50/4/6-4/1.2	4/6	4/1.2	1500/1000	400	8.1/3	150	162
50/4/8-4/0.75	4/8	4/0.75	1500/750	400	8.7/3.5	143	155
50/6/12-1.1/0.18	6/12	1.1/0.18	1000/500	400	3.2/1.2	123	135

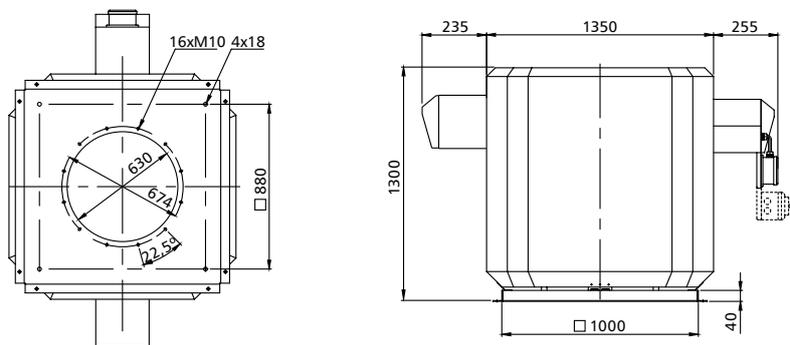
Fan	sound power level [dB A]								sound power level Lw (A)*
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	[dB A]
mcr Pasat 50/4	68	73	76	76	74	70	65	58	82
mcr Pasat 50/6	59	64	66	67	65	61	56	49	72
mcr Pasat 50/8	51	56	58	58	57	53	48	41	64
mcr Pasat 50/4/6	68	73	76	76	74	70	65	58	82
mcr Pasat 50/4/8	68	73	76	76	74	70	65	58	82
mcr Pasat 50/6/12	59	64	66	67	65	61	56	49	72

(*) Sound power level Lw (A) was determined for the highest fan efficiency point

Accessories

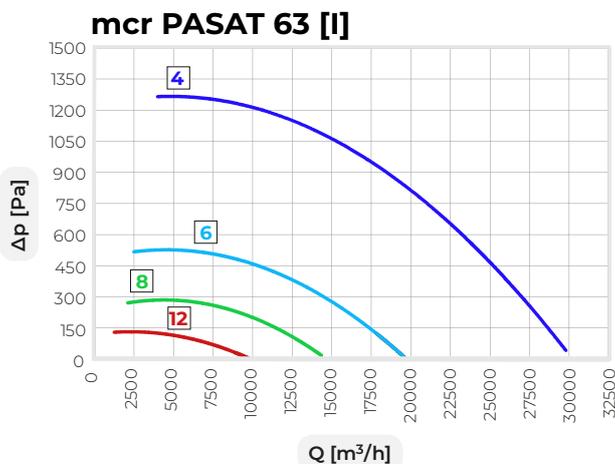


mcr PASAT 63 [I]



mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
63/4-11	4	11	1500	400/690	21.5	272	297
63/6-4	6	4	1000	400	9.4	273	298
63/8-1.5	8	1.5	750	400	3.85	259	284

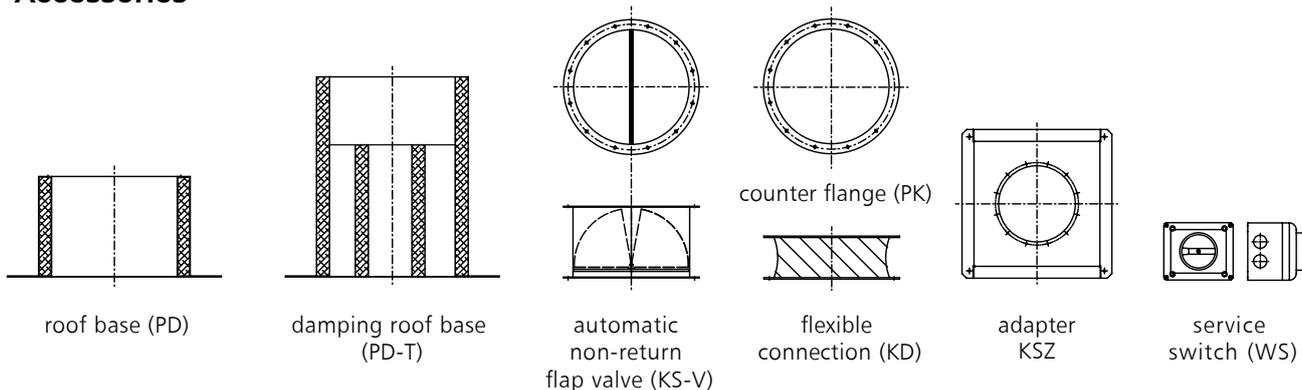
mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
63/4/6-11/3.7	4/6	11/3.7	1500/1000	400	22.6/9.3	315	340
63/4/8-11/2.8	4/8	11/2.8	1500/750	400	21.6/7.7	315	340
63/6/12-4/0.65	6/12	4/0.65	1000/500	400	10.4/3.1	290	315



Fan	sound power level [dB A]								sound power level Lw (A)* [dB A]
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
mcr Pasat 63/4	72	77	79	79	78	74	69	62	85
mcr Pasat 63/6	63	68	71	71	70	66	61	53	77
mcr Pasat 63/8	57	62	65	65	63	59	54	47	71
mcr Pasat 63/4/6	76	81	83	84	82	78	73	66	89
mcr Pasat 63/4/8	76	81	83	84	82	78	73	66	89
mcr Pasat 63/6/12	66	71	73	74	72	68	63	56	79

(*) Sound power level Lw (A) was determined for the highest fan efficiency point

Accessories

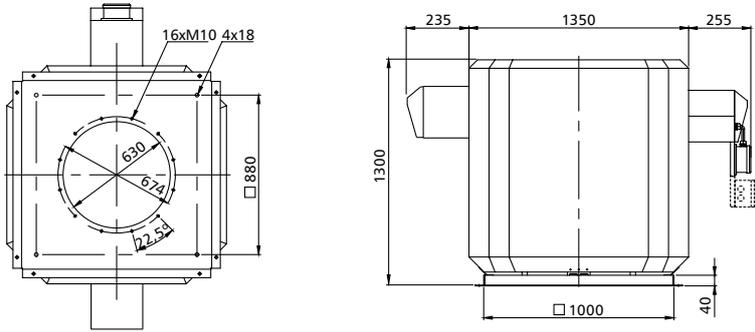


Δp - external statics pressure [Pa]
Q - capacity [m³/h]

nr - characteristics number
P - otor rated power [kW]

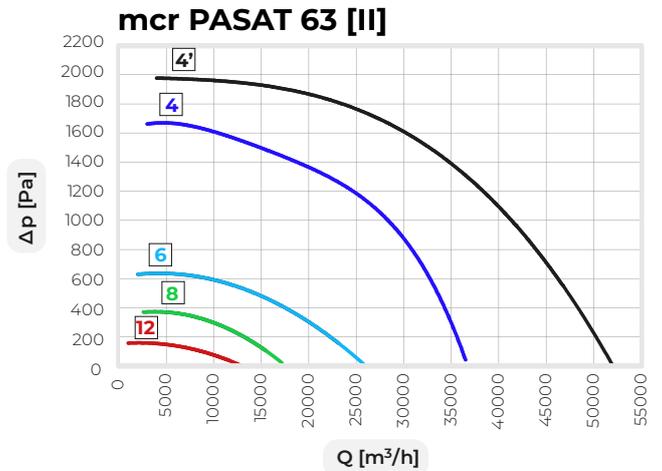
n - motor rotation [rpm]
Un - rated voltage

mcr PASAT 63 [II]



mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
63/4-30	4'	30	1500	400/690	58.2	439	468
63/4-18.5	4	18.5	1500	400/690	35.5	343	368
63/6-5.5	6	5.5	1000	400/690	12.6	282	307
63/8-2.2	8	2.2	750	400	5.7	271	296

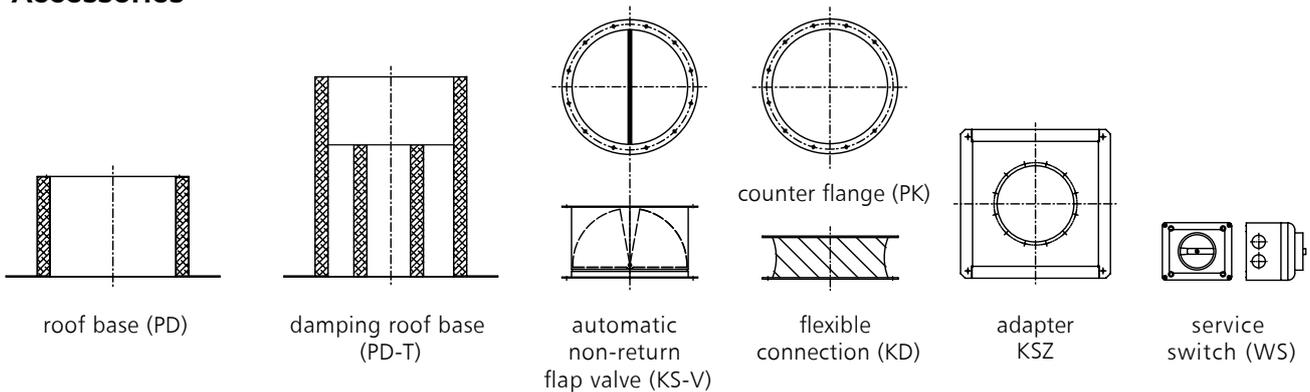
mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
63/4/6-18.5/6.5	4/6	18.5/6.5	1500/1000	400	34.1/14.8	366	391
63/4/8-18.5/4.8	4/8	18.5/4.8	1500/750	400	36.6/12.1	342	367
63/6/12-5.5/1	6/12	5.5/1	1000/500	400	14.1/5.4	298	323



Fan	sound power level [dB A]								sound power level Lw (A)* [dB A]
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
mcr Pasat 63/4'	74	79	82	82	80	76	71	64	88
mcr Pasat 63/4	76	81	83	84	82	78	73	66	89
mcr Pasat 63/6	66	71	73	74	72	68	63	56	79
mcr Pasat 63/8	59	64	67	67	66	62	57	49	73
mcr Pasat 63/4/6	72	77	79	79	78	74	69	62	85
mcr Pasat 63/4/8	72	77	79	79	78	74	69	62	85
mcr Pasat 63/6/12	63	68	71	71	70	66	61	53	77

(*) Sound power level Lw (A) was determined for the highest fan efficiency point

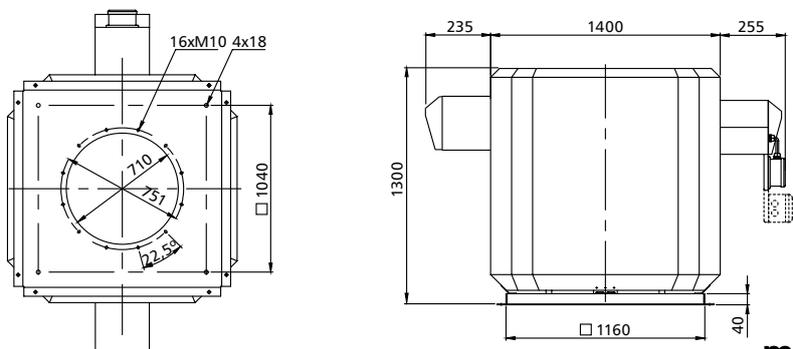
Accessories



m1 – F400 fan estimated weight without accessories [kg]
 m2 – F600 fan estimated weight without accessories [kg]

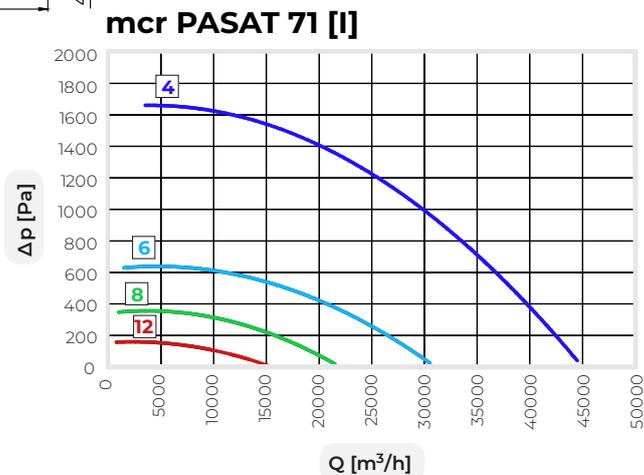
In – rated current
 Measurements at a temperature and air density of 1.2 kg/m³.

mcr PASAT 71 [I]



mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
71/4-18.5	4	18.5	1500	400/690	35.5	368	397
71/6-5.5	6	5.5	1000	400/690	12.6	307	336
71/8-2.2	8	2.2	750	400	5.7	296	325

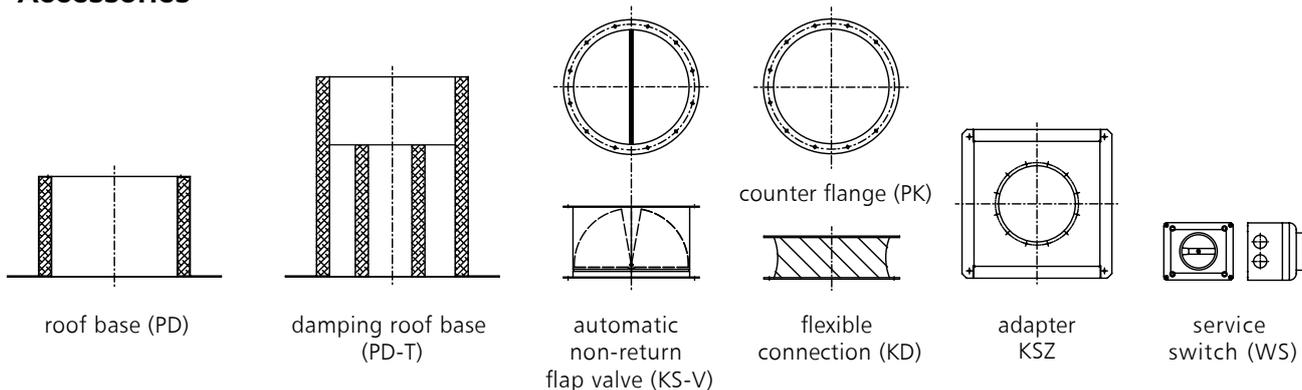
mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
71/4/6-18.5/6.5	4/6	18.5/6.5	1500/1000	400	34.1/14.8	391	420
71/4/8-18.5/4.8	4/8	18.5/4.8	1500/750	400	36.6/12.1	367	396
71/6/12-5.5/1	6/12	5.5/1	1000/500	400	14.1/5.4	323	352



wentylator	sound power level [dB A]								sound power level Lw (A)* [dB A]
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
mcr Pasat 71/4	75	80	83	83	82	78	73	65	89
mcr Pasat 71/6	66	71	73	74	72	68	63	56	79
mcr Pasat 71/8	59	64	67	67	65	62	56	49	73
mcr Pasat 71/4/6	75	80	83	83	82	78	73	65	89
mcr Pasat 71/4/8	75	80	83	83	82	78	73	65	89
mcr Pasat 71/6/12	66	71	73	74	72	68	63	56	79

(*) Sound power level Lw (A) was determined for the highest fan efficiency point

Accessories

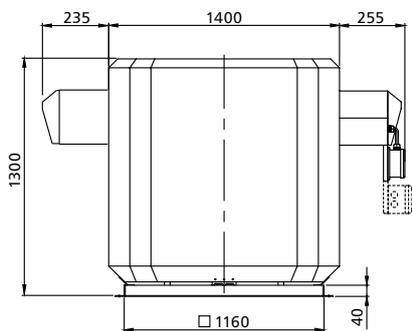
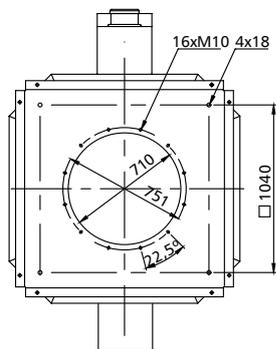


Δp - external statics pressure [Pa]
Q - capacity [m³/h]

nr - characteristics number
P - motor rated power [kW]

n - motor rotation [rpm]
Un - rated voltage

mcr PASAT 71 [II]



mcr PASAT 71 [II]

mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
71/4-22	4	22	1500	400/690	41.5	400	429
71/6-7.5	6	7.5	1000	400/690	17	332	361
71/8-3	8	3	750	400	7.6	304	333

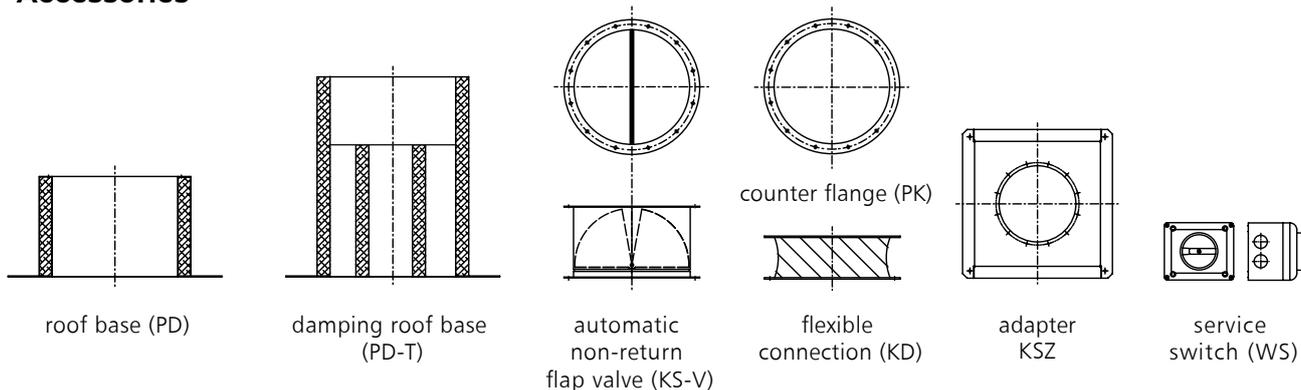
mcr Pasat	nr	P [kW]	n [1/min]	Un [V]	In [A]	m1 [kg]	m2 [kg]
71/4/6-22/7.5	4/6	22/7.5	1500/1000	400	41.5/16.6	410	439
71/4/8-22/5.3	4/8	22/5.3	1500/750	400	40.9/13.2	405	434
71/6/12-7.5/1.3	6/12	7.5/1.3	1000/500	400	17.5/5.5	341	370



wentylator	sound power level [dB A]								sound power level Lw (A)* [dB A]
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
mcr Pasat 71/4	77	82	84	85	83	79	74	67	90
mcr Pasat 71/6	69	74	76	77	75	71	66	59	82
mcr Pasat 71/8	61	66	69	69	68	64	59	51	75
mcr Pasat 71/4/6	77	82	84	85	83	79	74	67	90
mcr Pasat 71/4/8	77	82	84	85	83	79	74	67	90
mcr Pasat 71/6/12	69	74	76	77	75	71	66	59	82

(*) Sound power level Lw (A) was determined for the highest fan efficiency point

Accessories



m1 - F400 fan estimated weight without accessories [kg]
 m2 - F600 fan estimated weight without accessories [kg]

In - rated current
 Measurements at a temperature and air density of 1.2 kg/m³

ACCESSORIES

PD, PD-T roof bases

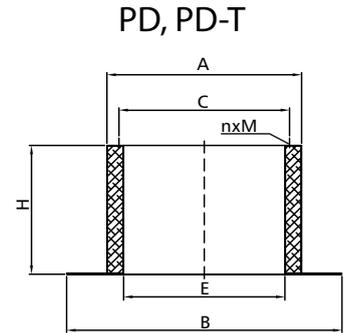
The base is used for fan roof installation. It is attached to the fan casing (to its mounting plate) with screws, depending on the size of the fan.

As standard, the roof bases are made of galvanized steel sheet.

Available variants:

PD roof base – for flat and sloped roofs.

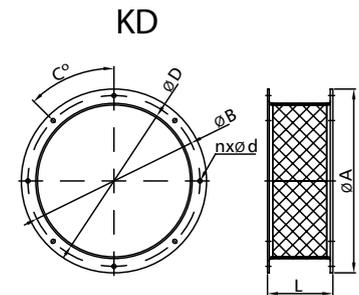
PD-T roof base – with silencers for flat and sloped roofs.



fan - typee	type	A [mm]	B [mm]	C [mm]	E [mm]	H [mm]	nxM
mcr Pasat 50	PD-50	965	1150	880	835	350	4 x M12
mcr Pasat 63	PD-63	965	1150	880	835	450	4 x M16
mcr Pasat 71	PD-71	1125	1310	1040	995	450	4 x M16

KD flexible connections

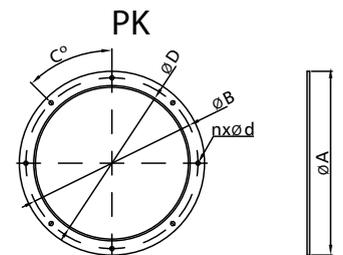
A flexible connection (KD) is used to eliminate vibrations transferred by the fan onto the ventilation system. It acts as a vibration damper. It is also installed to compensate for thermal elongation. The fan built into the ventilation system should be equipped with a flexible connection on the suction side. Special silicate and glass fabric ensure durability at 400°C for 120 min or 600°C for 60 min.



fan - typee	type	D [mm]	A [mm]	B [mm]	L [mm]	C	nxd [mm]	m [kg]
mcr Pasat 50	KD-50	500	570	541	150	30	12 x 9,6	1,6
mcr Pasat 63	KD-63	630	710	674	200	22,5	16 x 10,5	2,0
mcr Pasat 71	KD-71	710	790	751	200	22,5	16x 10,5	2,3

PK counter flanges

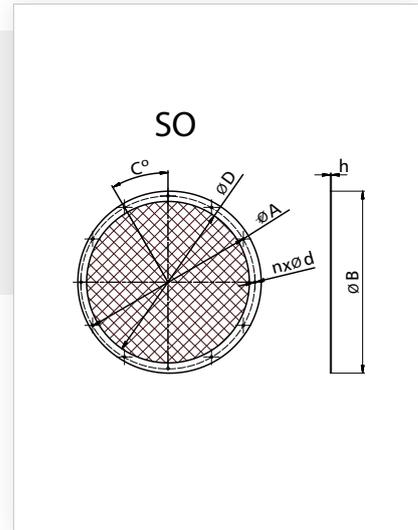
The counter flange is a component used primarily for the installation of flexible connections (KD) and connecting the ventilation system to the fan. It is made of galvanized steel sheet. It is powder-coated as standard; galvanized upon request.



fan - typee	type	D [mm]	A [mm]	B [mm]	C	nxd [mm]	m [kg]
mcr Pasat 50	PK-50	504	570	541	30	12 x 9.6	1,3
mcr Pasat 63	PK-63	634	710	674	22,5	16 x 10.5	1,8
mcr Pasat 71	PK-71	716	790	751	22,5	16 x 10,5	2,0

SO protective grille (SO)

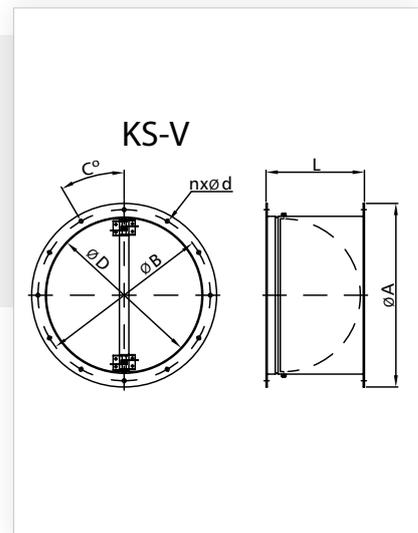
Protective grille secures the fan against foreign bodies. Periodically inspect the grille for cleanliness and remove dirt. It is made of galvanized steel sheet and galvanized mesh.



fan - typee	type	D [mm]	A [mm]	B [mm]	h [mm]	C	nxd [mm]	m [kg]
mcr Pasat 50	SO-50	500	541	570	5	30	12 x 9,6	1,7
mcr Pasat 63	SO-63	630	674	710	5	22,5	16 x 10,5	2,5
mcr Pasat 71	SO-71	710	751	790	5	22,5	16 x 10,5	2,9

KS-V automatic non-return flap valve

The flap valve (KS-V) is used to prevent air circulation and heat loss when the fan is not in operation. The flap valve is to be mounted vertically (damper wing horizontal axis). The flap housing is made of galvanized steel sheet.



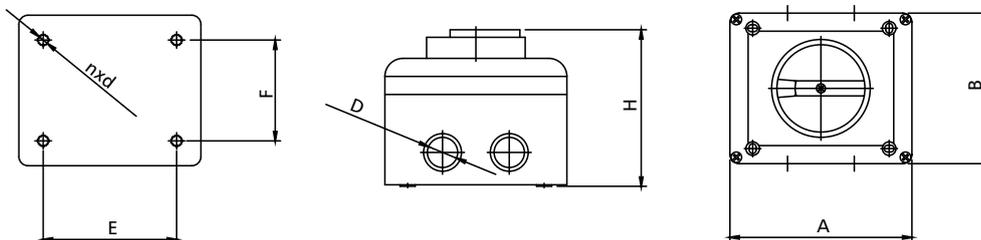
fan - typee	type	D [mm]	A [mm]	B [mm]	L [mm]	C	nxd [mm]	m [kg]
mcr Pasat 50	KS-V-50	500	570	541	320	30	12 x 9,6	11,3
mcr Pasat 63	KS-V-63	630	710	674	360	22,5	16 x 10,5	16,2
mcr Pasat 71	KS-V-71	710	790	751	430	22,5	16 x 10,5	20,8

WS service switch

A service switch (WS) is used to cut off power to the fan for service inspection. The switch is additionally equipped with an auxiliary contact for signaling the power cut-off position for cases where case power supply to the fan is not

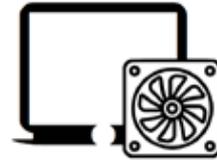
switched to the original position after the service inspection. Mounting the switch directly on the fan housing requires a special mounting bracket. The service switch with a 3-field arrangement is used for 230/400 V (single-speed) motors, while one with a 6-field arrangement for 400/690 V single-speed motors and 400/400 V two-speed motors.

Service switch (WS)										
type	A [mm]	B [mm]	E [mm]	F [mm]	H [mm]	nxd [mm]	U [V]	I [A]	dławnice [D]	notes
WS-16/3	90	90	67	48	95	4x4	690	16	M20[x4]	3-field
WS-16/6	90	90	67	48	95	4x4	690	16	M20[x4]	6-field
WS-32/6	116	100	90	52	108	4x4	690	32	M25[x4]	6-field
WS-63/6	170	155	105	95	185	4x6	690	63	M25/M32[x4]	6-field



| Fan selection software available in our designer zone at:

<https://mercor.com.pl/strefa-projektanta>



| For more information on the mcr PASAT fan, please refer to the operation and maintenance manual:



Gdańsk Headquarters
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