MYCOND

TECHNICAL MANUAL

Energy-saving supply and exhaust unit

MVS700-DW
MVS900-DW
MVS1100-DW
MVS1400-DW
MVS1600-DW
MVS2200-DW
MVS2800-DW

15.12.2022EN - ver.1.0

CONTENTS

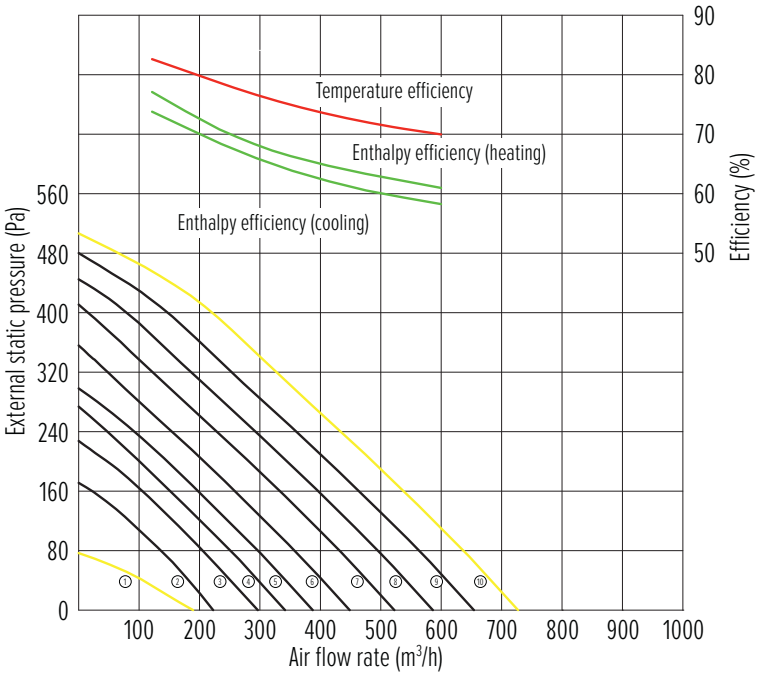
SPECIFICATIONS

Model		MVS 700-DW	MVS 900-DW	MVS 1100-DW	MVS 1400-DW	MVS 1600-DW	MVS 2200-DW	MVS 2800-DW
Air flow rate (m3/h)		600	800	1000	1300	1500	2000	2600
Air flow rate (l/s)		167	222	278	360	417	555	722
External pressure (Pa)		97	100	86	90	72	77	81
Enthalpy efficiency (%)	Cooling	59-74	55-66	58-70	56-68	63-71	60-68	56-68
	Heating	61-78	57-76	62-75	59-70	65-73	62-72	59-70
Heat transfer efficiency (%)		70-83	68-83	70-83	70-83	76-80	76-82	70-83
Noise level, dB(A)		39	41	42	43	50	51.5	53
Voltage (V)		220-240V / 1 phase / 50 Hz						
Input power (W)		162	290	327	424	700	724	848
Power cable		3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2	3x1.5 mm^2
Control cable		2x0.5mm^2	2x0.5mm^2	2x0.5mm^2	2x0.5mm^2	2x0 5mm^2	2x0.5mm^2	2x0.5mm^2
Control	Standard	Yes (7-day clock)						
	(BMS)Modbus	Yes						
Fan type		BLDC fan motor						
Fan speed (supply)		10-speed fan control						
Fan speed (exhaust)		10-speed fan control						
Summer bypass		Yes (automatic, with an adjustable range)						
Defrosting		Yes (automatic, with an adjustable range)						
CO2 control		Additional sensor (on/off control within an adjustable range)						
Fan Boost contacts		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fire shutdown		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight (kg)		34	53	61	71	106	122	142
Dimensions: LxWxH (mm)		867×902×280	1134×884×388	1134×1134×388	1193×1243×388	1134×884×776	1134×1134×776	1193×1243×776
Diameter (mm)		Ø200	Ø250	Ø250	Ø250	650×280	650×280	650×280

SPECIFICATIONS OF MVS700-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	23	0.26	120	35	83	74	78	24	34
	2	38	0.38	173	42	82	73	76	26	
	3	53	0.5	226	48	81	72	74	28	
	4	68	0.62	279	55	80	70	72	29	
	5	83	0.74	332	62	78	68	70	30	
	6	98	0.86	385	68	77	66	68	32	
	7	113	0.98	438	75	75	64	66	34	
	8	128	1.1	491	82	74	62	64	36	
	9	145	1.22	545	90	72	60	62	38	
	10	162	1.34	600	97	70	59	61	39	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



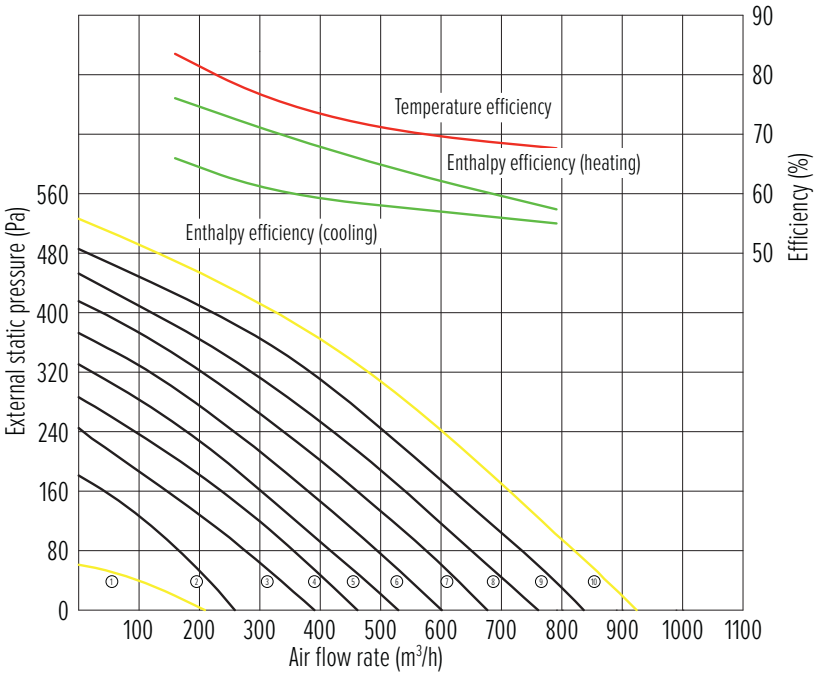
Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.	

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS MVS900-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	31	0.3	160	20	83	66	76	25	53
	2	60	0.52	231	29	82	65	74	27	
	3	89	0.74	302	38	80	64	72	29	
	4	118	0.96	373	48	79	62	70	30	
	5	147	1.18	444	56	77	60	68	32	
	6	176	1.4	515	65	76	59	66	34	
	7	205	1.62	586	73	74	58	64	36	
	8	234	1.84	657	82	72	57	62	38	
	9	263	2.06	728	90	70	56	60	40	
	10	290	2.27	800	100	68	55	57	41	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.	

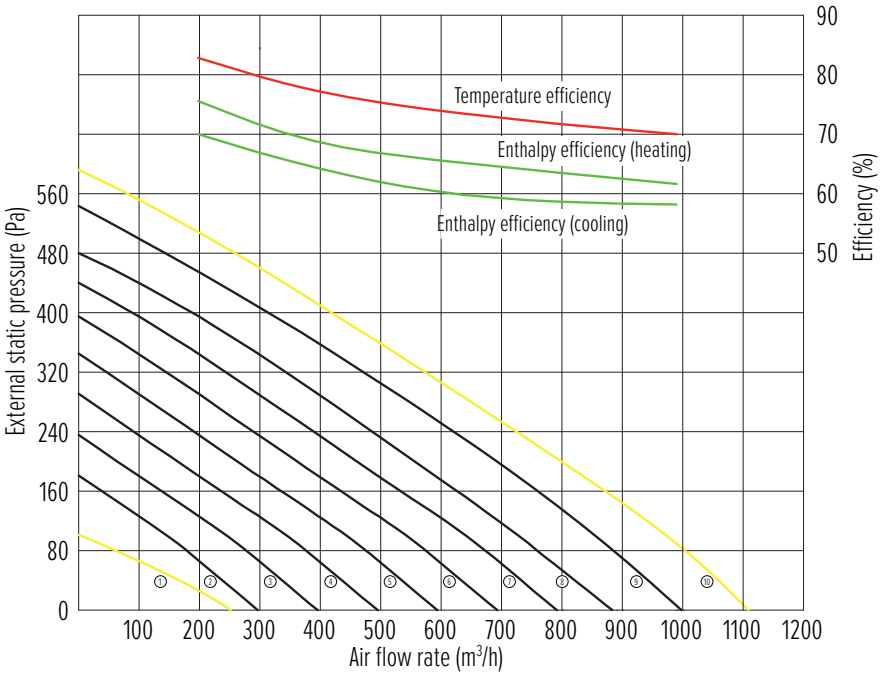
Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS

SPECIFICATIONS MVS1100-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	32.2	0.33	200	25	83	70	75	25	61
	2	60	0.58	288	31	81	68	73	27	
	3	100	0.83	376	37	80	67	72	29	
	4	130	1.08	464	43	78	65	70	30	
	5	160	1.32	552	49	77	64	68	32	
	6	200	1.56	640	55	75	63	67	34	
	7	230	1.8	728	61	73	61	65	36	
	8	260	2.05	816	67	72	60	64	38	
	9	290	2.3	904	73	71	59	63	40	
	10	327	2.54	1000	86	70	58	62	42	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%

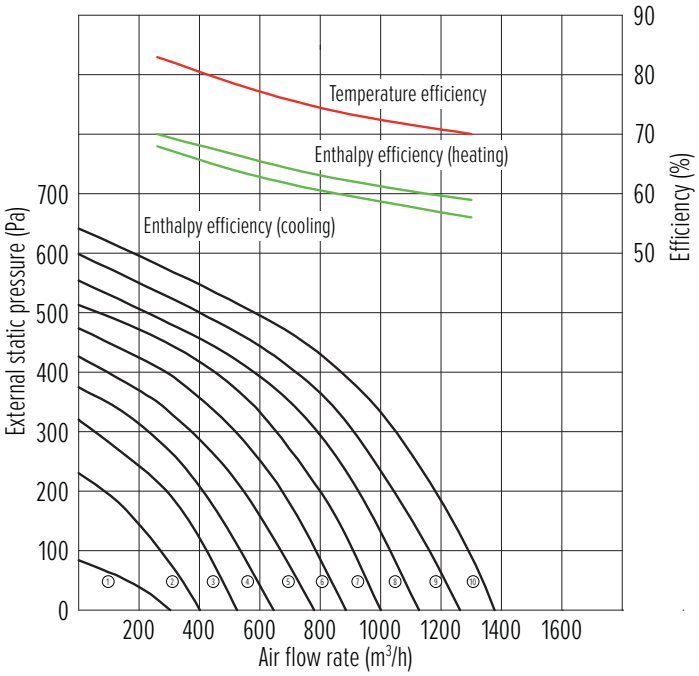
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS MVS1400-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	33	0.33	260	30	83	68	70	25	71
	2	78	0.66	375	36	81	66	68	27	
	3	123	0.99	490	42	80	65	67	29	
	4	166	1.32	605	48	78	63	66	30	
	5	209	1.65	720	54	77	61	65	32	
	6	252	1.98	835	60	75	60	64	34	
	7	295	2.3	950	66	74	59	63	36	
	8	338	2.62	1065	72	73	58	62	38	
	9	381	2.94	1180	78	71	57	61	40	
	10	424	3.26	1300	90	70	56	59	43	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



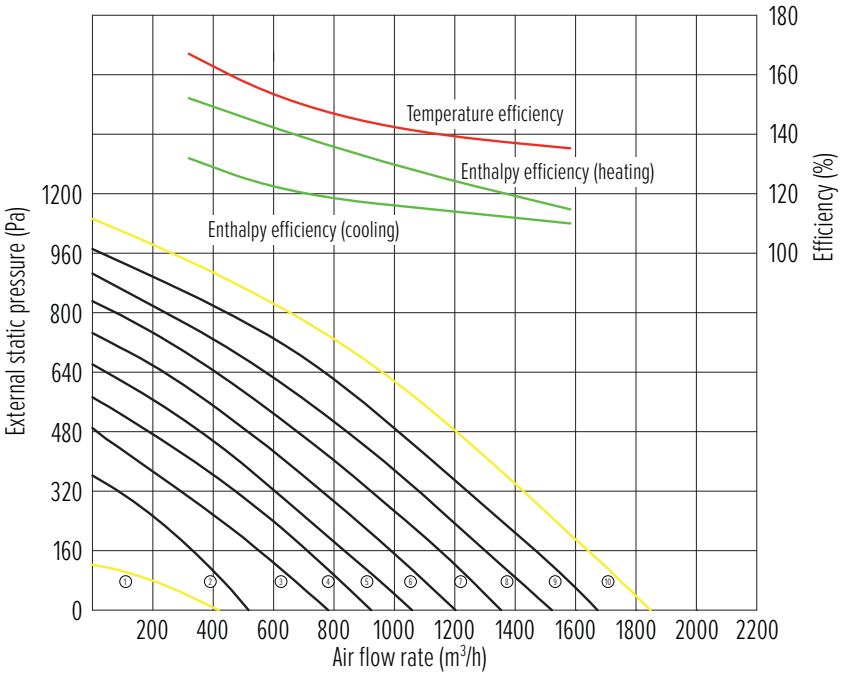
Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.	

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS MVS1600-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	62	0,6	320	40	166	132	152	50	106
	2	120	1,04	462	58	164	130	148	54	
	3	178	1,48	604	76	160	128	144	58	
	4	236	1,92	746	96	158	124	140	60	
	5	294	2,36	888	112	154	120	136	64	
	6	352	2,8	1030	130	152	118	132	68	
	7	410	3,24	1172	146	148	116	128	72	
	8	468	3,68	1314	164	144	114	124	76	
	9	526	4,12	1456	180	140	112	120	80	
	10	580	4,54	1600	200	136	110	114	82	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%

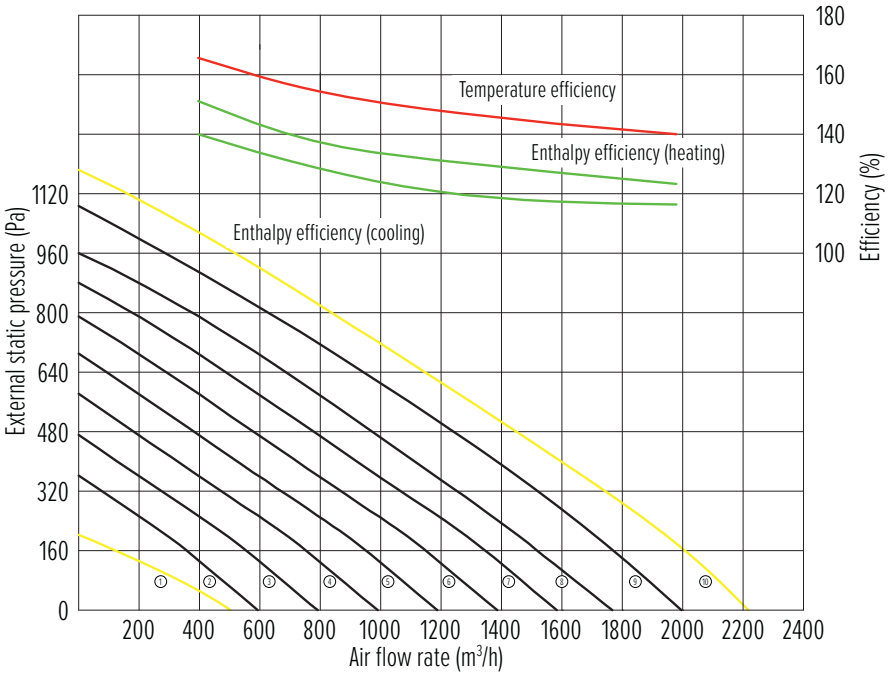
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS MVS2200-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	64,4	0,66	400	50	166	140	150	50	122
	2	120	1,16	576	62	162	136	146	54	
	3	200	1,66	752	74	160	134	144	58	
	4	260	2,12	928	86	156	130	140	60	
	5	320	2,64	1104	98	154	128	136	64	
	6	400	3,12	1280	110	150	126	134	68	
	7	460	3,6	1456	122	146	122	130	72	
	8	520	4,1	1632	134	144	120	128	76	
	9	580	4,6	1808	146	142	118	126	80	
	10	654	5,08	2000	172	140	116	124	84	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.



Conditions of use	
Outdoor use	Example:
Temperature -10 ... 40 °C	Indoor use
Relative humidity ≤ 85%	Cooling
Indoor use	Temperature 27 °C
Temperature -10 ... 40 °C	Relative air humidity 50%
Relative humidity ≤ 85%	Heating
Installation requirements	Temperature 20 °C
Similar condition of indoor air	Relative air humidity 40%

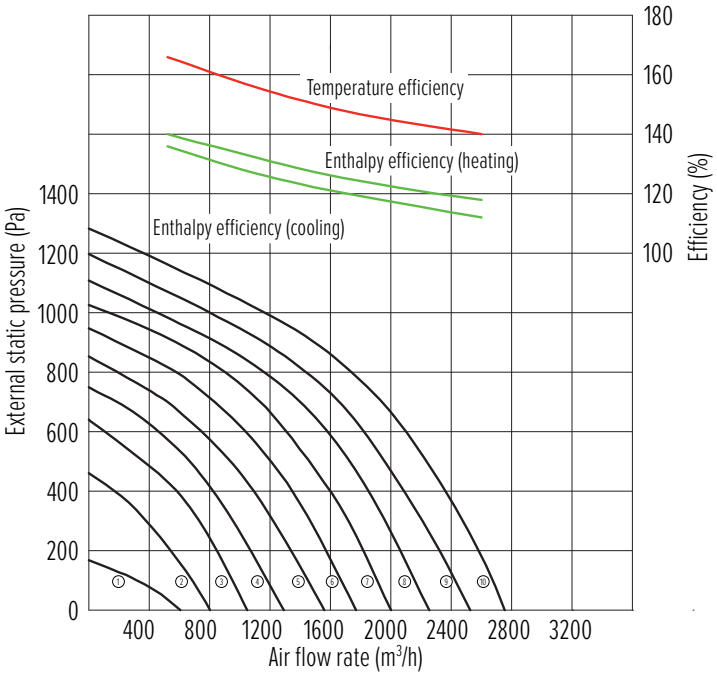
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

SPECIFICATIONS MVS2800-DW

Power supply	Number of speeds	Power	Current	Air flow rate, m^3/h	ESP Pa	Heat exchange efficiency, %	Enthalpy efficiency, %		Noise level, dB(A)	Weight, kg
							Cooling	Heating		
220V-50Hz	1	66	0,66	520	60	166	136	140	50	142
	2	152	1,32	750	72	162	132	136	54	
	3	246	1,96	980	84	160	130	134	58	
	4	332	2,64	1210	96	156	126	132	60	
	5	418	3,3	1440	108	154	122	130	64	
	6	504	3,96	1670	120	150	120	128	68	
	7	590	4,6	1900	132	148	118	126	72	
	8	676	5,24	2130	144	146	116	124	76	
	9	762	5,88	2360	156	142	114	122	80	
	10	848	6,5	2600	180	140	112	118	86	

1. The input power, current and heat exchange efficiency have been tested with the standard air flow rate.
2. Noise level: The sound is measured 1.5 m below the body centre. The noise level is measured in a semi-echogenic noise testing room. Actual noise level will be higher than the stated value due to the influence of ambient noise.

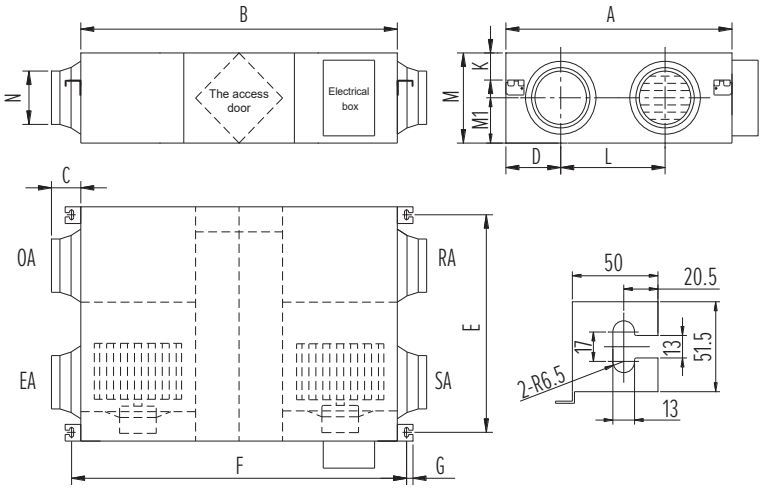


Conditions of use	
Outdoor use Temperature -10 ... 40 °C Relative humidity ≤ 85% Indoor use Temperature -10 ... 40 °C Relative humidity ≤ 85% Installation requirements Similar condition of indoor air	Example: Indoor use Cooling Temperature 27 °C Relative air humidity 50% Heating Temperature 20 °C Relative air humidity 40%
* The indoor air refers to air in a living room equipped with an air conditioner. Never store the unit in the cold or in a place with rapid temperature changes, even if the temperature is within the above mentioned temperature range.	

Motor type	BLDC motor
Motor insulation class	B
Temperature rise	Less than 80 K
Ambient temperature	-10~40 °C
Flashover voltage	above 2MΩ (DC500V)
Motor type	AC1250V, 1 minute

OUTLINE DRAWINGS

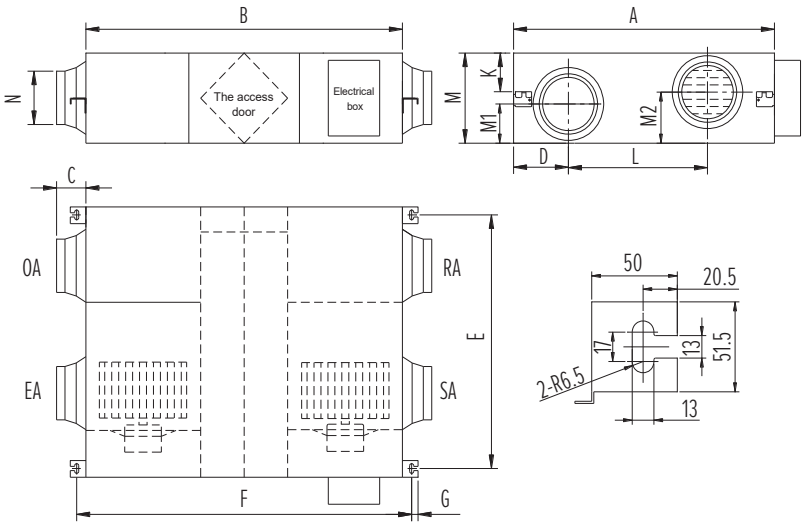
MVS700-DW – MVS1100-DW



Legend:
EA – exhaust air
OA – outdoor air
SA – supply air
RA – return air

Model	A	B	C	D	E	F	G	L	K	M	M1	N
MVS700-DW	902	867	107	197	833.5	922	20.5	451.5	115.5	280	139.5	ø194
MVS900-DW	884	1134	85	202	818	1189	20.5	378	128	388	194	ø242
MVS1100-DW	1134	1134	85	202	1068	1189	20.5	628	128	388	194	ø242

MVS1400-DW

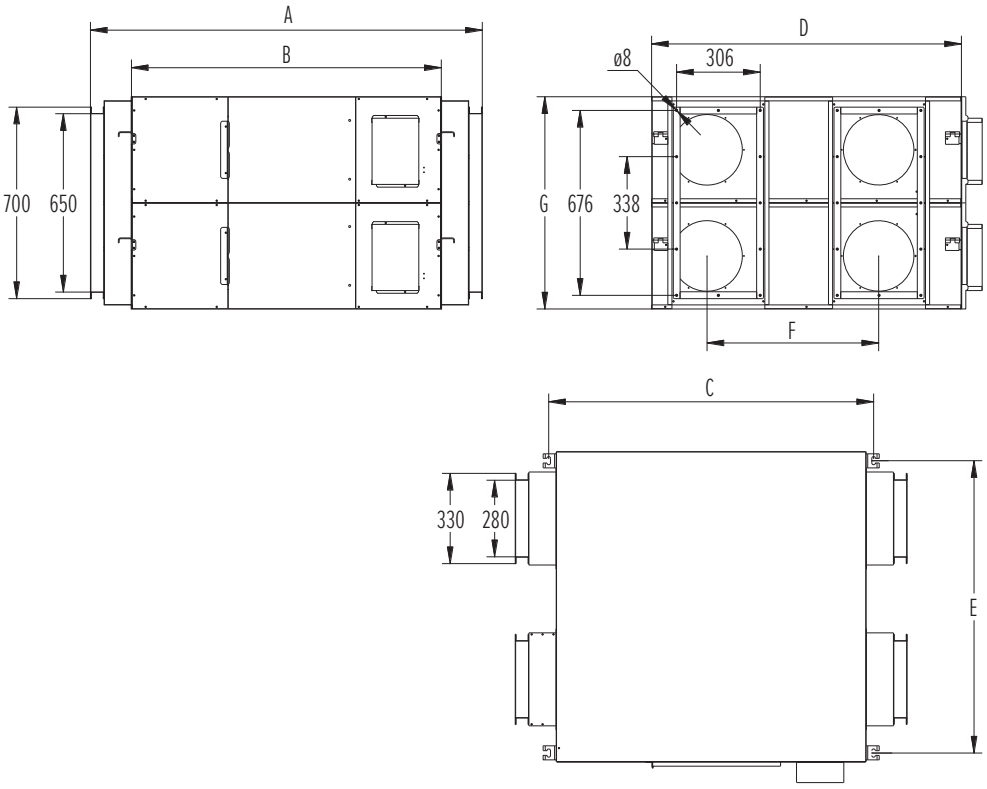


Legend:
EA – exhaust air
OA – outdoor air
SA – supply air
RA – return air

Model	A	B	C	D	E	F	G	L	K	M	M1	M2	N
MVS1400-DW	1243	1193	85	241	1172.5	1248	20.5	629.5	133	388	191	241	ø242

OUTLINE DRAWINGS

MVS1600-DW – MVS2800-DW



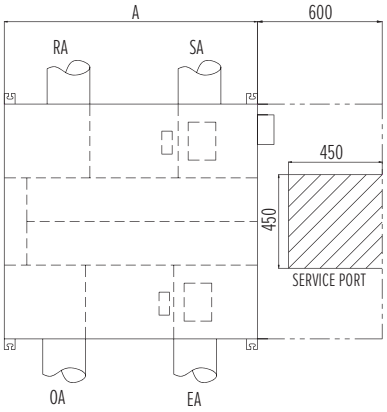
Legend:

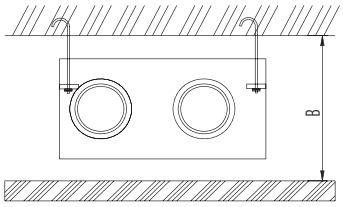
EA – exhaust air
OA – outdoor air
SA – supply air
RA – return air

Model	A	B	C	D	E	F	G	H	I
MVS1600-DW	1434	1134	1189	884	818	378	776	650	280
MVS2200-DW	1434	1134	1189	1134	1068	628	776	650	280
MVS2800-DW	1493	1193	1248	1243	1173	629.5	776	650	280

DESIGNING GUIDELINES

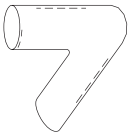
Supply and exhaust units MVS***-DW are intended for horizontal installation indoors together with a system of air ducts and ventilation channels.
In the case of location behind a suspended ceiling, it is necessary to provide service doors to ensure access for maintenance of filters.



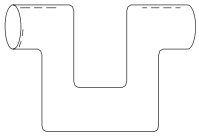


Model	A, mm	Indoor ceiling height B, mm
MVS700-DW	902	330
MVS900-DW	884	450
MVS1100-DW	1134	450
MVS1400-DW	1243	450
MVS1600-DW	884	450
MVS2200-DW	1134	450
MVS2800-DW	1193	450

1. Ensure that the ceiling height is not less than specified in column B of the table below.
2. Do not install the equipment next to the boiler fire tube.
3. When laying the pipeline, avoid the following:



Bends

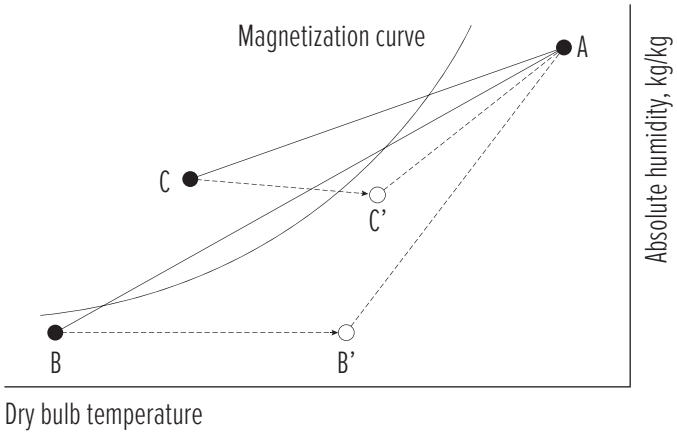


Multiple turns

Multiple pipeline reducers / corrugated pipeline

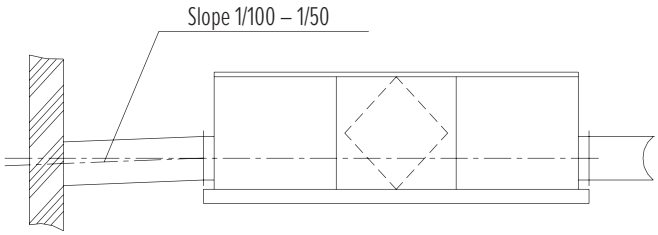
DESIGNING GUIDELINES

4. Do not use flexible pipelines.
5. Fire dampers must be installed according to local regulations and fire safety rules.
6. The equipment shall not be exposed to ambient temperatures over 40 °C or installed near open flames.
7. Take precautions to prevent formation of dew and frost. As shown on the diagram on the right, dew and frost will form on the unit, when the saturation curve runs through points A and C. Use a preheater to prevent formation of condensate and frost, while observing the conditions of the curve passing through points B and B' or through points C and C'.
8. The distance between two air vents on the outdoor side of the wall shall exceed 1000 mm to prevent the exhaust air from circulating back into the indoor unit.
9. If the unit includes a preheater, synchronize the unit operation with the preheater, since the preheater will start operating only after the unit starts.
10. The user can install a noise damper to minimize noise from the indoor unit.

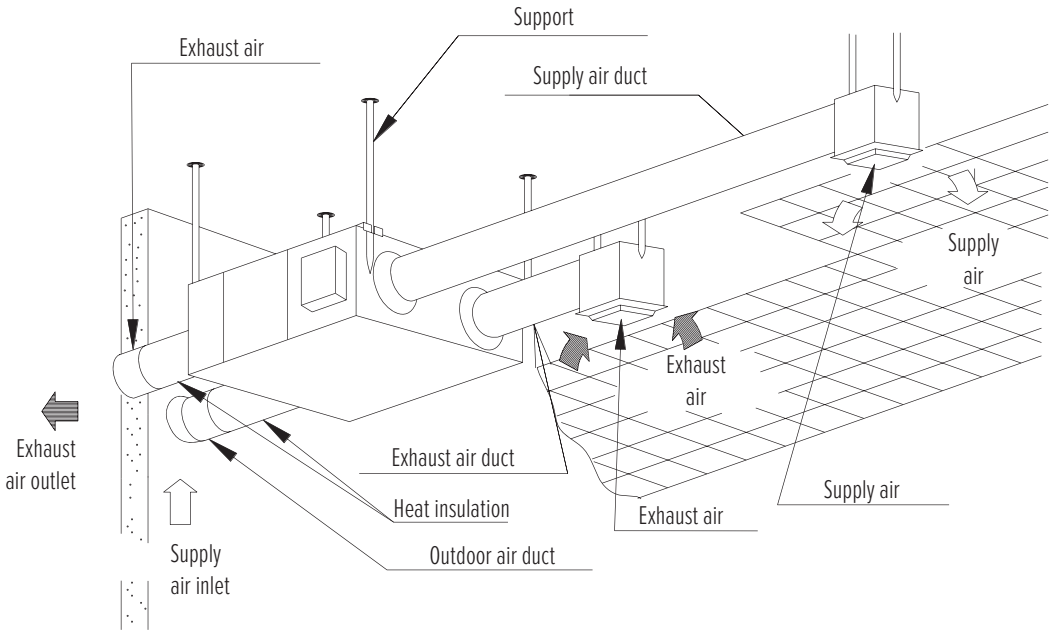


AIR DUCT DESIGNING

1. Joints between the unit air vents and air ducts must be covered and sealed to prevent air leakage. When performing installation, always observe the applicable directives and rules.
2. The two outdoor air vents shall be sloped down in the outside direction to avoid ingress of rain water (at an angle of 1/100 – 1/50).
3. Apply heat insulation to outside surface of both pipelines to prevent condensation. Material: glass wool, thickness: 25 mm.

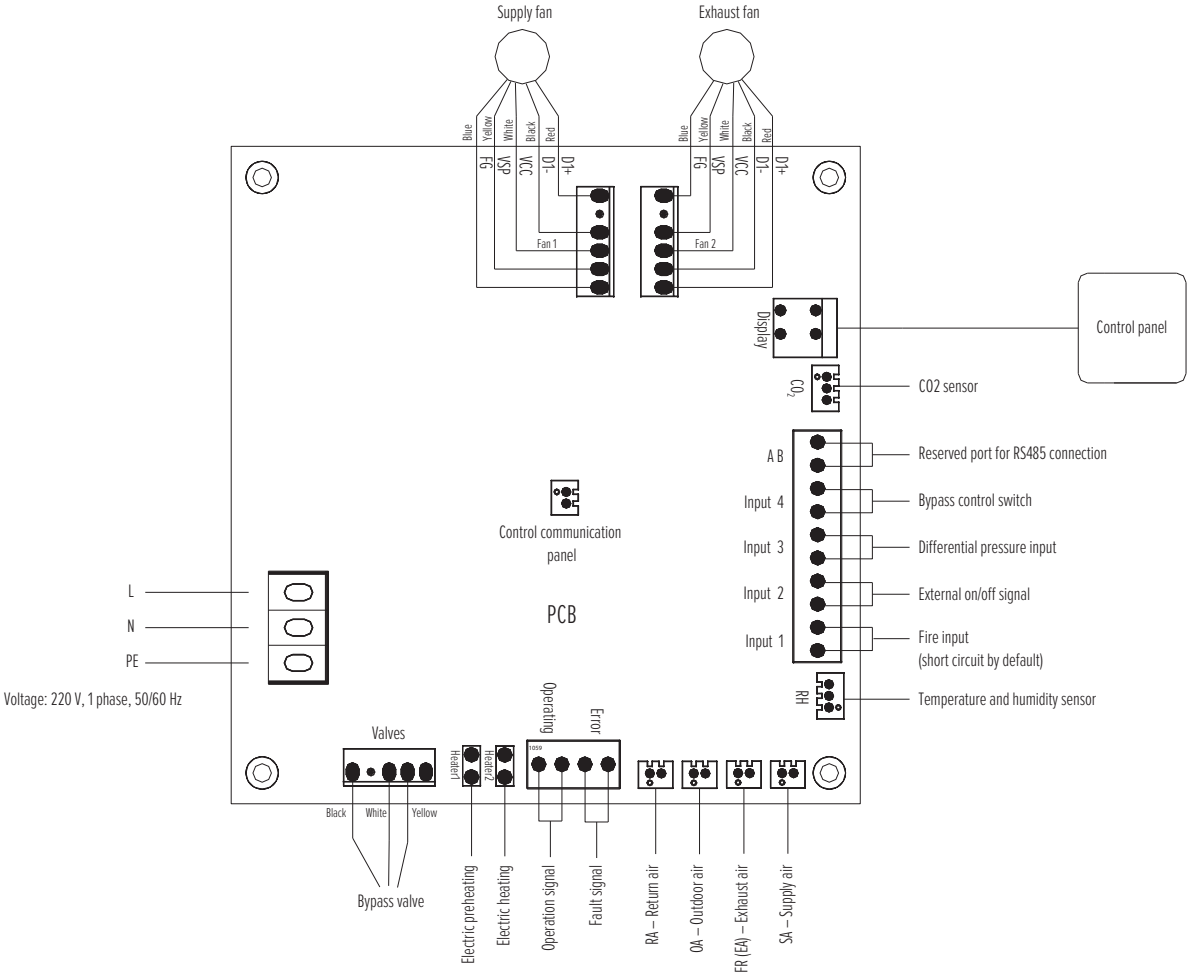


INSTALLATION DIAGRAM



WIRING DIAGRAMS

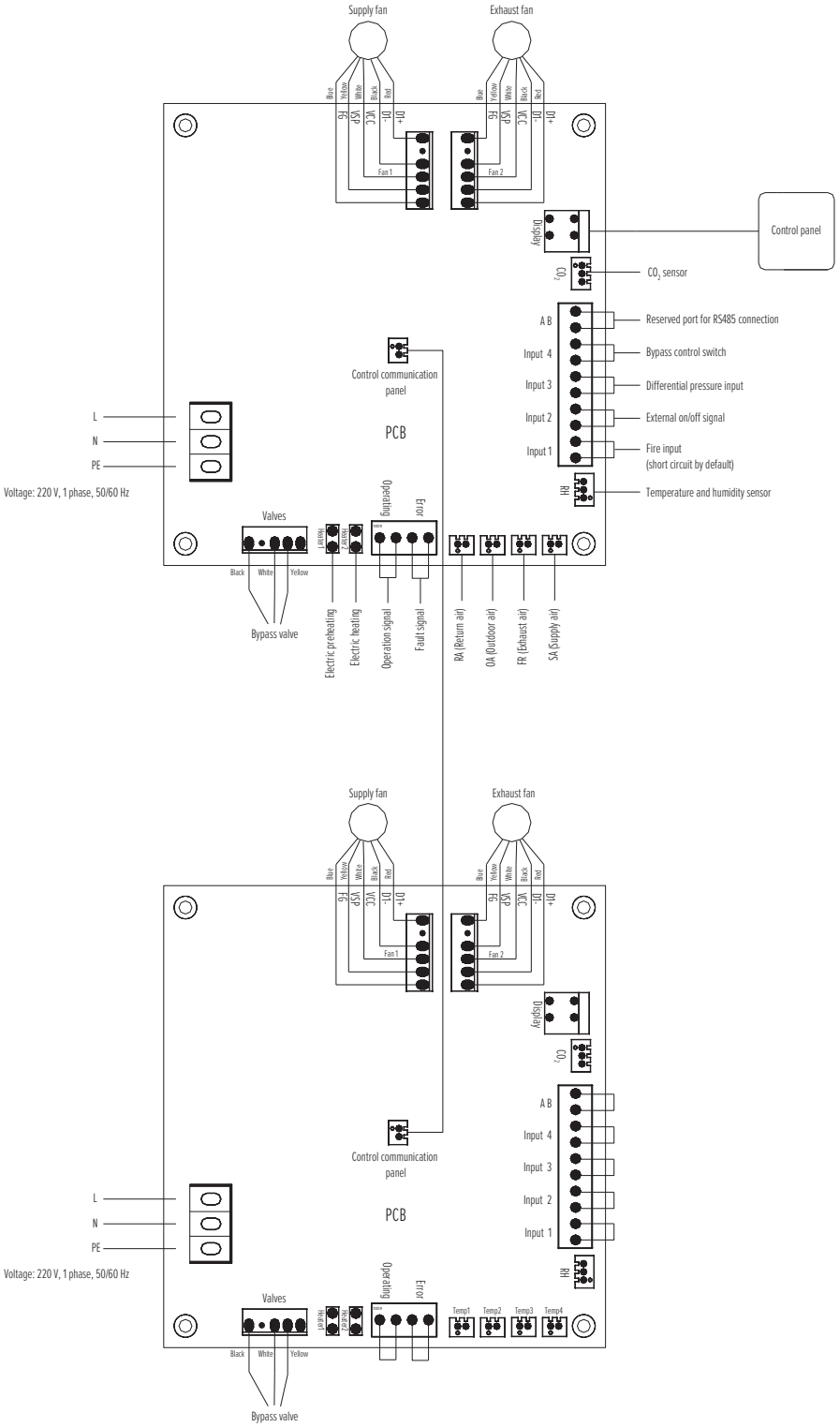
MVS700-DW – MVS1400-DW



Model	Power supply	Panel type
MVS700-DW to MVS1400-DW	220 V AC, 50 Hz	HDK-CK-DC

WIRING DIAGRAMS

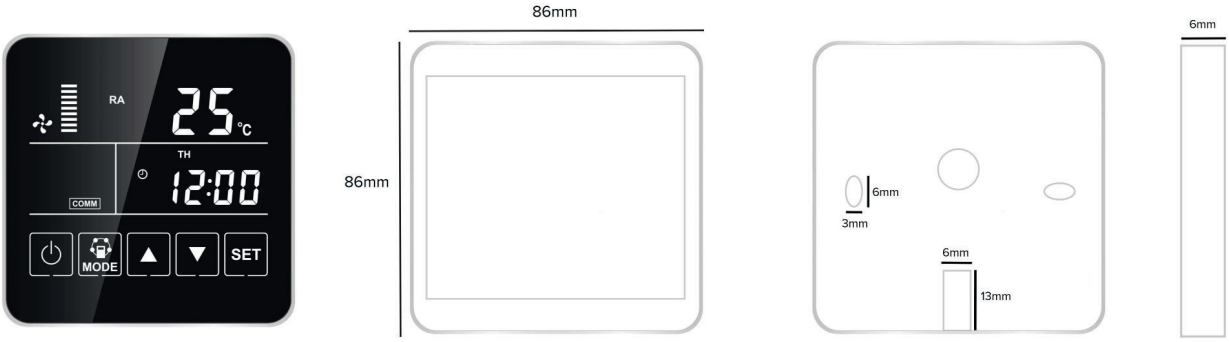
MVS1600-DW – MVS2800-DW



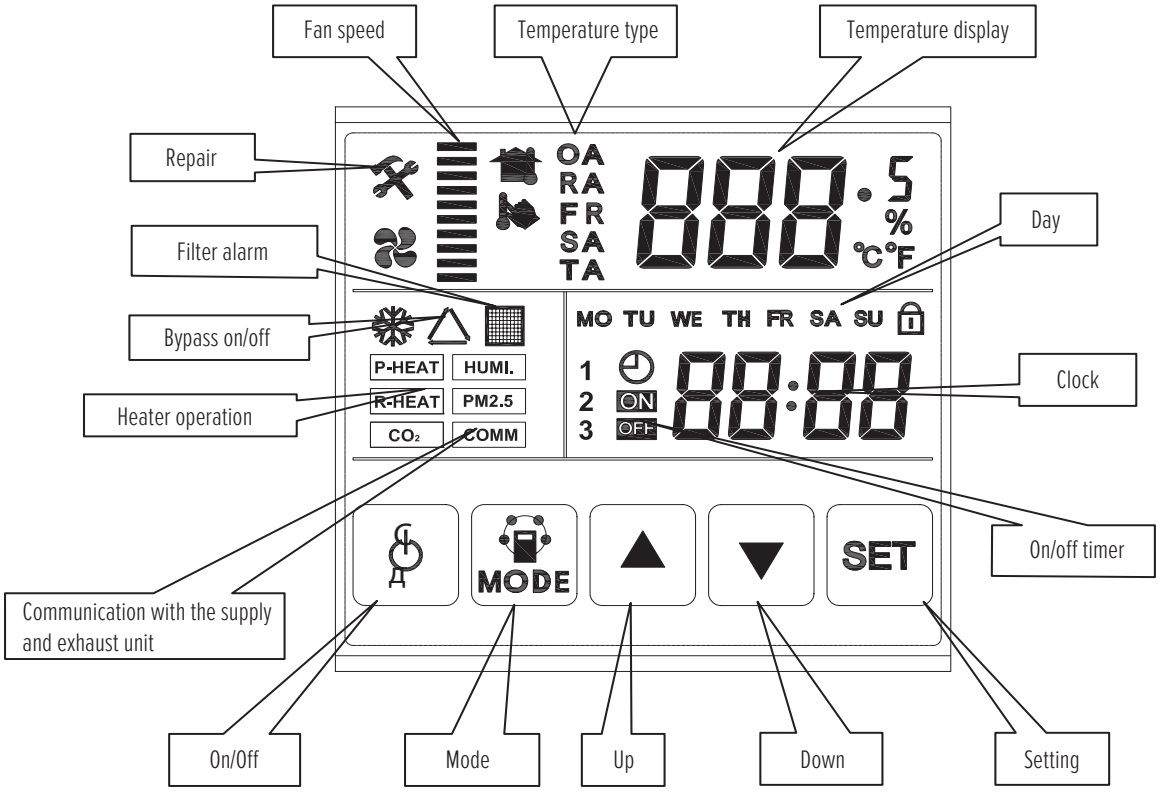
Model	Power supply	Panel type
MVS1600-DW to MVS2800-DW	220 V AC, 50 Hz	HDK-CK-DC

CONTROL PANEL

The smart controller in the form of an LCD touch screen is mounted on the outside.



DESCRIPTION OF THE CONTROL PANEL



MODBUS PROTOCOL

Baud rate: 9600 bps
Parity check: No
Data bits: 8
Stop bit: 1
Communication interval: > 200ms
Supported function code: 0x03, 0x06

Register address	Readable	Writeable	Value range	Function description	Remark
0(0x0000)	√	√	0-1	on-off state 0 - off, 1 - on	
1(0x0001)	√	√	1-10	Supply fan speed	
2(0x0002)	√	√	1-10	Exhaust fan speed	
3(0x0003)	√	√	15-30	Temperature setting	
4(0x0004)	√		0-100	Humidity, %	
5(0x0005)	√		0-2000	CO_2 ppm	
6(0x0006)	√		0-120	Fresh air temperature	Positive temperature: if the reading value is equal to or below 20, the actual temperature will be equal to the temperature reading minus 20. Negative temperature: if the reading value is below 20, the actual temperature will be equal to 20 minus the temperature reading.
7(0x0007)	√		0-120	Exhaust air temperature	
8(0x0008)	√		0-120	Supply air temperature	
9(0x0009)	√		0-120	Return air temperature	
10(0x000a)	√		0	--	

Register address	Readable	Writeable	Value range	Function description	Remark
11(0x000b)	√		0-255	Fire alarm protection: bit 0 OA temperature sensor error: bit 1 EA temperature sensor error: bit 2 RA temperature sensor error: bit 3 SA temperature sensor error: bit 4 Humidity sensor error: bit 5 CO2 sensor error: bit 6 Filter alarm: bit 7	
12(0x000c)	√		0-1	Bypass switch, 1 = on, 0 = off	
13(0x000d)	√		0-1	p-heating state: 1 = on, 0 = off	
14	√		0-1	r-heating state: 1 = on, 0 = off	
15	√		0	0	
16	√		0	0	
17	√		0	0	
18	√		0	0	
19	√		0	0	
20	√		0	0	
21	√		0	0	
22	√	√	0-23	System time: hours	
23	√	√	0-59	System time: minutes	
24	√	√	1-7	System time: week	
25	√	√	1-99	IP address	