

**MODULES
for air handling
units**



AIR Kit



AIR Kit

AIR Kit control module enables connection of the universal, inverter outdoor unit with a refrigerant coil in the air handling unit.

Main characteristics:

- simple construction and low cost
- unlimited control of the condensing unit
- 0-10V analogue signal control
- heating and cooling mode
- soft start function
- support of all Office Standard MDV units
- error display
- defrost function
- anti-freeze Frost sensor (option)
- on/off signal control

Very simple connection

The system utilizes expansion elements built-in the outdoor unit, so it is unnecessary to use additional valves.

The unit is controlled by the input signals:

- dry contact, on-off signal to enable cooling and heating operation
- 0-10 V DC signal for stepless control of unit capacity

Signals outputted from the control unit:

- dry contact for alarm signal
- dry contact, signal active during outdoor unit exchanger defrosting

Heating/cooling mode

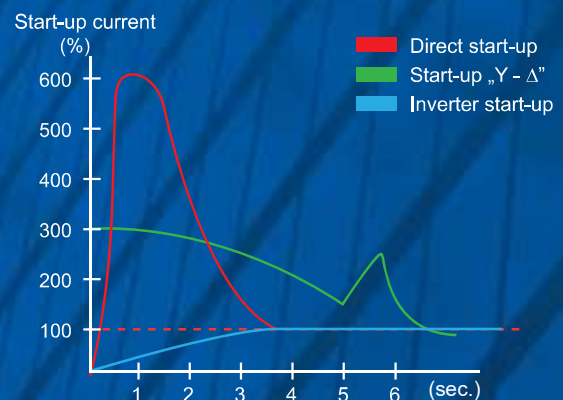
AIR Kit module can supply coils of the air handling units that operates both, as coolers or heaters.



Soft start

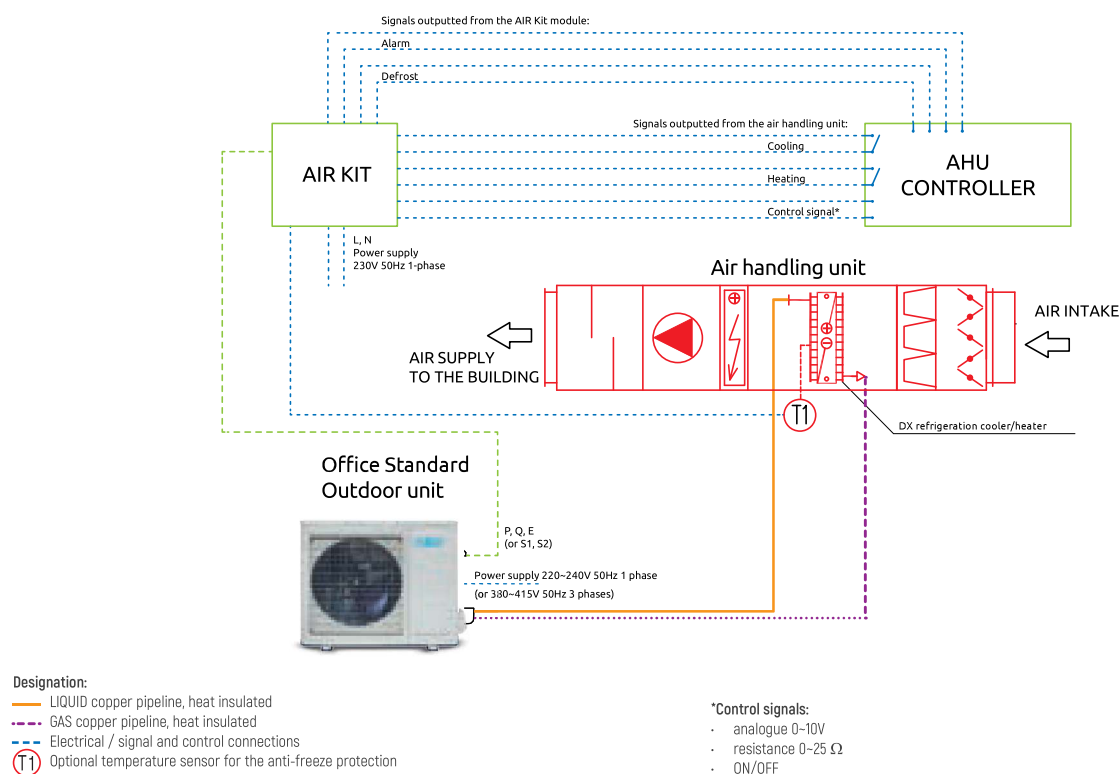
Inverter compressor with the „soft“ start function limits temporary overloads and voltage drops in the building's electrical network. High performance inverter compressors achieve rated capacity in a very short time, directly impacting the time of cooling down or heating up the air-conditioned rooms. Lower temperature fluctuations provide an instant feeling of comfort.

Comparing the inverter start-up with conventional one

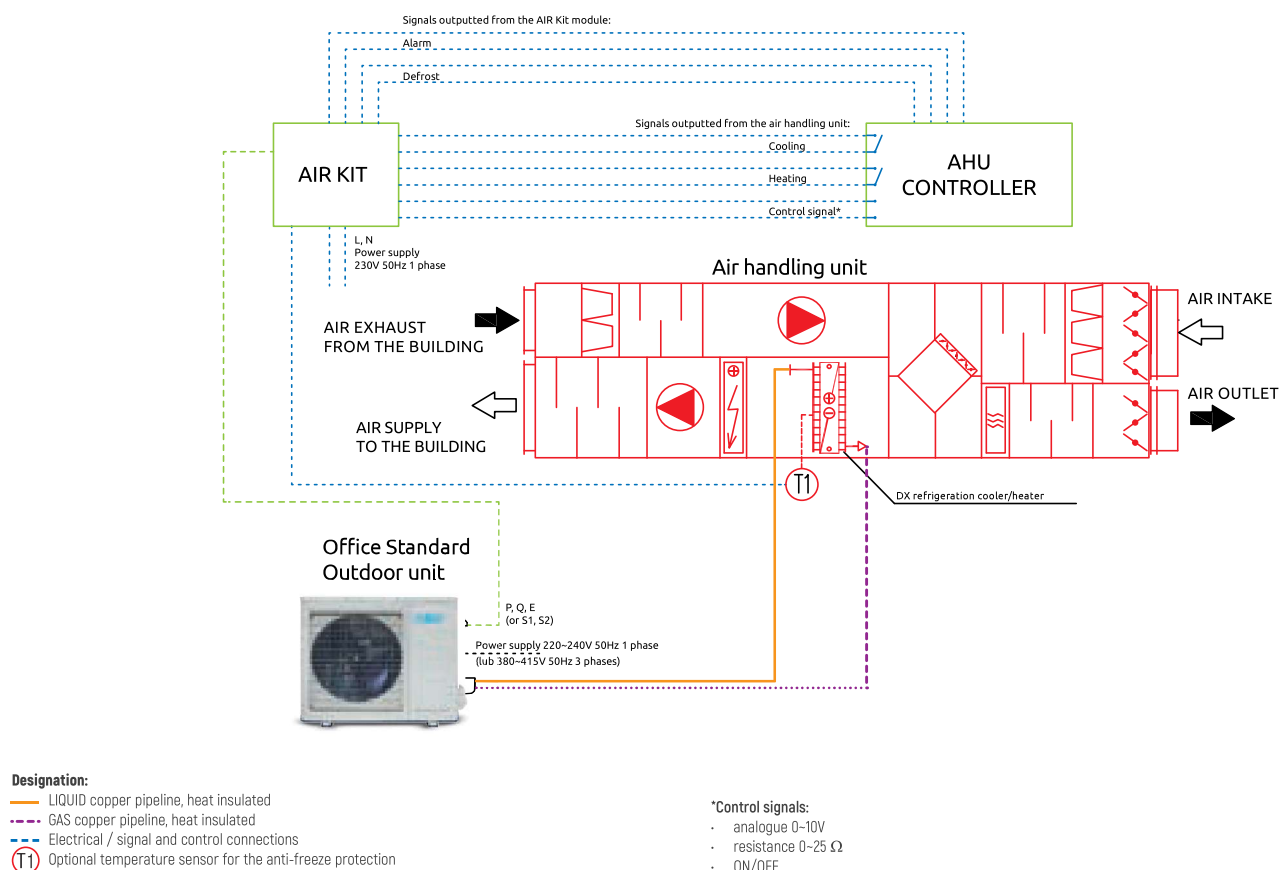


Circuit diagrams

Connection of the outdoor unit with the supply air handling unit



Connection of the outdoor unit with the supply and exhaust air handling unit



AHUKZ-DM

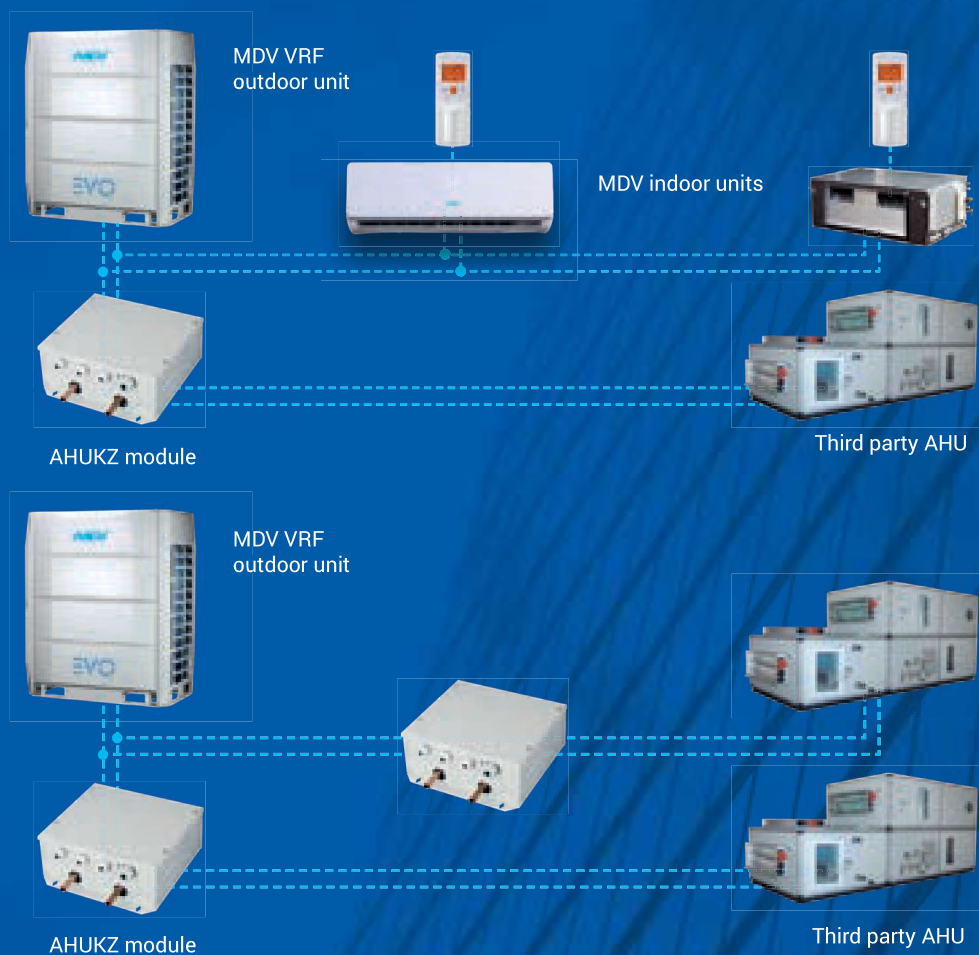


Functions

CE-AHUKZ-00~03DM control module enables interaction of the MDV VRF system with another manufacturers units, that needs to be supplied with R410A refrigerant. The module can be used for supplying refrigerant heat exchangers in air handling units and other unconventional air-conditioning units.

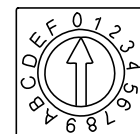
Flexible configuration

The AHU can be connected as one of several indoor units in the VRF system (indoor units with total capacity of minimum 50% of the whole refrigerant circuit capacity). It is also possible to connect one AHU directly to one outdoor unit or several AHUs to one outdoor unit while maintaining individual control.



Capacity control - high application flexibility

AHUKZ modules are available in different sizes from 2,2 kW to 56 kW. The built-in knob enables reduction of the rated module capacity so as to optimally adjust it to the AHU heat exchanger capacity. Built-in electronic expansion valve enables stepless adjustment of cooling and heating, ensuring comfort in the air-conditioned room.

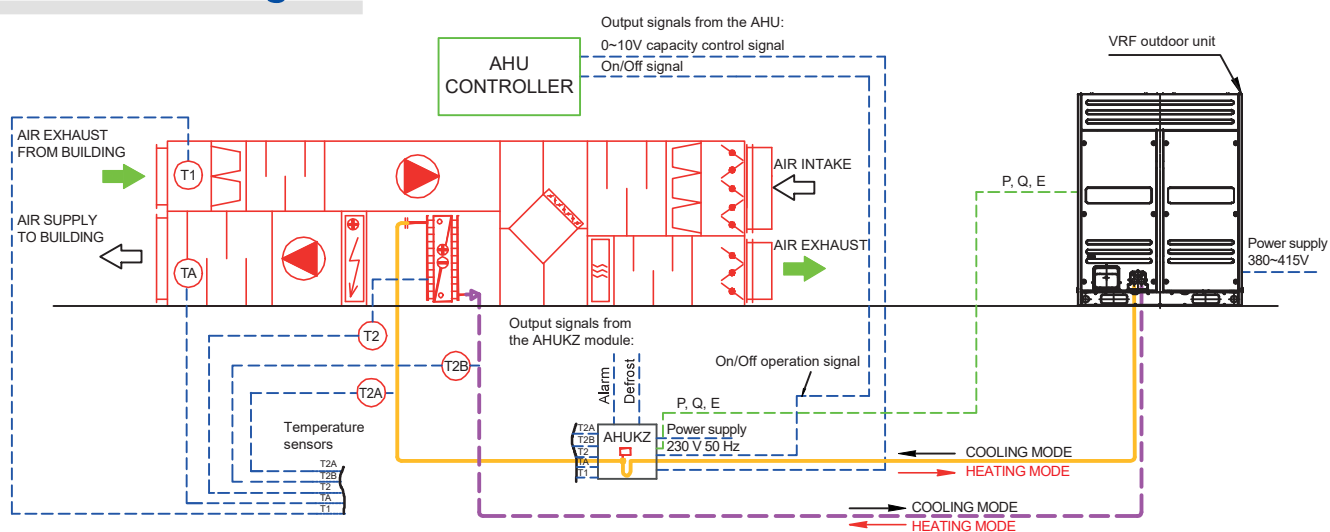


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Stepless capacity control using AHU signal

AHUKZ module enables capacity adjustment by means of a 0-10V analogue signal from the AHU. Additionally, this module is fitted with an output defrost signal and automatic operation mode changeover.

Connection diagram



DESIGNATIONS:

- T1** return air temperature (on air extract from a room)
- TA** supply air temperature
- T2A** heat exchanger inlet temperature (liquid pipe)
- T2** heat exchanger average temperature (in the middle of the exchanger)
- T2B** heat exchanger outlet temperature (gas pipe)

- LIQUID copper pipeline, thermally insulated
- GAS copper pipeline, thermally insulated
- Electrical / signal and control connections

Technical specifications

Model			AHUKZ-00DM	AHUKZ-01DM	AHUKZ-02DM	AHUKZ-03DM
Power supply		V/phase/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Cooling	Minimum / maximum capacity	kW	2.2-9.0	9.0-20	20-36	36-56
	Minimum / maximum capacity	kW	2.2-9.0	9.0-20	20-36	36-56
Dimensions	Net dimensions (width x height x depth)	mm	393×341×125	393×341×125	393×341×125	393×341×125
	Transport dimensions (width x height x depth)	mm	490×440×205	490×440×205	490×440×205	490×440×205
Refrigerant			R410A	R410A	R410A	R410A
Refrigerant flow control			Electronic expansion valve			
Piping	Inlet pipe	mm	Ø8	Ø8	Ø12.7	Ø15.9
	Outlet pipe	mm	Ø8	Ø8	Ø12.7	Ø15.9
Cables	Power supply	mm ²	3×2.0	2×2.0	3×4.0	3×4.0
	Communication with external unit	mm ²	3×0.75 shielded	3×0.75 shielded	3×0.75 shielded	3×0.75 shielded
Wired remote controller			WDC-86E/KD	WDC-86E/KD	WDC-86E/KD	WDC-86E/KD



Technical specifications

Set				AHU-KIT09-B1AF	AHU-KIT12-B1AF	AHU-KIT09-CX1AF	AHU-KIT12-CX1AF	AHU-KIT18-CX1AF	AHU-KIT24-CXAF	AHU-KIT24-B1
Coil module				KA8140	KA8140	KA8140	KA8140	KA8140	KA8140	KA8140
Outdoor unit				MOBA03-09HFN8-QRDOGW	MOBA03-12HFN8-QRDOGW	MOX133-09HFN8-QRDOGW	MOX133-12HFN8-QRDOGW	MOX330-18HFN8-QRDOGW	MOX431-24HFN8-QRDOGW	UNVS-24R32INT OU
Outdoor unit power supply (V/phase/Hz)				220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Coil module power supply (V/phase/Hz)				220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Version				Reversible heat pump						
Cooling	Capacity	Rated	kW	2.6	3.5	2.6	3.5	5.3	7.0	7.0
		Min-Max	kW	1.0-3.2	1.1-4.1	0.9-3.4	1.1-4.2	0.34-5.83	2.1-7.9	2.2-8.2
	Rated input power		kW	0.71	1.24	0.73	1.21	1.55	2.60	2.19
	EER		kW/kW	3.70	2.82	3.60	2.89	3.42	2.69	3.21
Heating	Capacity	Rated	kW	2.9	3.5	2.9	3.8	5.6	7.3	7.4
		Min-Max	kW	0.8-3.4	1.1-4.2	0.8-3.4	1.1-4.2	3.1-5.85	1.6-7.9	2.4-8.7
	Rated input power		kW	0.74	0.96	0.73	1.10	1.57	2.40	1.98
	COP		kW/kW	3.92	3.65	3.97	3.45	3.57	3.04	3.72
Airflow			m³/min	28.3	28.3	29.2	30.0	35.0	58.3	58.3
Sound pressure level			dB(A)	55	55	55.5	56	55	59	60
Dimensions (width x depth x height)			mm	700×270×550	700×270×550	720×270×495	720×270×495	805×330×554	890×324×673	890×342×673
Transport dimensions (width x depth x height)			mm	815×325×615	815×325×615	835×300×540	835×300×540	915×370×615	995×398×740	995×398×740
Weight (net/gross)			kg	22.8/25.1	22.8/25.1	23.2/25.0	23.2/25.0	32.7/35.4	42.9/45.9	43.9/46.9
Refrigerant	Type			R32	R32	R32	R32	R32	R32	R32
	Charged amount	kg		0.50	0.50	0.55	0.55	1.08	1.42	1.50
Refrigerant installation	Liquid/gas	mm		Ø6.35 / Ø9.52	Ø6.35 / Ø9.52	Ø6.35 / Ø9.52	Ø6.35 / Ø9.52	Ø6.35 / Ø12.7	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9
	Maximum length	m		25	25	25	25	30	50	50
	Maximum height difference	m		10	10	10	10	20	25	25
Recommended electrical wiring and protections	Power supply cord	mm²		3×1.5	3×1.5	3×1.5	3×1.5	3×2.5	3×2.5	3×2.5
	Fuse	A		10	10	-	-	16	20	20
Recommended operating temperature ranges (outdoor)		Cooling	°C	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50
		Heating	°C	-25 ~ 30	-25 ~ 30	-15 ~ 30	-15 ~ 30	-25 ~ 30	-25 ~ 30	-15 ~ 24

Capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB/24°C WB. Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB/6°C WB. Installation length: length of connected pipes is 7.5 m. the height difference is 0. The unit contains fluorinated greenhouse gases (R32 GWP=675). For the proper operation of outdoor units in the heat pump mode it is necessary to apply a drain pan heater or provide smooth condensate drain in another manner. Choice of the appropriate solution is a matter for installer.



Technical specifications

Set				AHU-KIT36-B1	AHU-KIT36-B3	AHU-KIT42-B1	AHU-KIT42-B3	AHU-KIT48-B3	AHU-KIT55-B3
Coil module				KA8140	KA8140	KA8140	KA8140	KA8140	KA8140
Outdoor unit				UNVS-36R32INTS OU	UNVS-36R32INTT OU	UNVS-42R32INTS OU	UNVS-42R32INTT OU	UNVS-48R32INT OU	UNVS-55R32INT OU
Outdoor unit power supply (V/phase/Hz)				220-240/1/50	380-415/3/50	220-240/1/50	380-415/3/50	380-415/3/50	380-415/3/50
Coil module power supply (V/phase/Hz)				220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Version				Reversible heat pump					
Cooling	Capacity	Rated	kW	10.4	10.5	12.1	12.1	13.6	15.7
		Min-Max	kW	2.6-12.0	2.6-12.0	3.2-13.2	3.2-13.2	4.8-14.6	5.3-16.7
	Rated input power		kW	3.91	3.90	4.03	4.03	5.42	5.99
	EER		kW/kW	2.66	2.69	3.00	3.00	2.51	2.62
Heating	Capacity	Rated	kW	11.1	11.1	13.5	13.5	15.9	18.2
		Min-Max	kW	2.9-13.2	2.9-13.2	2.9-14.7	2.9-14.7	3.9-16.8	4.4-19.3
	Rated input power		kW	3.07	2.97	3.49	3.49	5.34	6.03
	COP		kW/kW	3.62	3.74	3.87	3.87	2.98	3.02
Airflow			m³/min	66.7	66.7	66.7	66.7	125.0	125.0
Sound pressure level			dB(A)	63	63	63	63	63.5	64
Dimensions (width x depth x height)			mm	946×410×810	946×410×810	946×410×810	946×410×810	952×415×1333	952×415×1333
Transport dimensions (width x depth x height)			mm	1090×500×885	1090×500×885	1090×500×885	1090×500×885	1095×495×1480	1095×495×1480
Weight (net/gross)			kg	66.9/71.5	80.5/85.0	71.0/75.0	71.0/75.0	103.7/118.3	107/121.2
Refrigerant	Type			R32	R32	R32	R32	R32	R32
	Charged amount		kg	2.40	2.40	2.80	2.80	2.92	3.00
Refrigerant installation	Liquid/gas		mm	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9	Ø9.52 / Ø15.9
	Maximum length		m	75	75	75	75	75	75
	Maximum height difference		m	30	30	30	30	30	30
Recommended electrical wiring and protections	Power supply cord		mm²	5×2.5	5×2.5	5×2.5	5×2.5	5×2.5	5×2.5
	Fuse		A	25	16	16	16	16	20
Recommended operating temperature ranges (outdoor)		Cooling	°C	-15 ~ 50					
		Heating	°C	-15 ~ 24					

Capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB/24°C WB. Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB/6°C WB. Installation length: length of connected pipes is 75 m, the height difference is 0. The unit contains fluorinated greenhouse gases (R410A, GWP=2088). For the proper operation of outdoor units in the heat pump mode, it is necessary to apply a drain pan heater or provide smooth condensate drain in another manner. Choice of the appropriate solution is a matter for installer.



Technical specifications

Set				AHU-KIT-180-B3	AHU-KIT-200-C3	AHU-KIT-260-C3	AHU-KIT-335-C3	AHU-KIT-400-B3	AHU-KIT-450-B3	AHU-KIT-500-B3	AHU-KIT-560-B3	AHU-KIT-615-B3				
Coil module				AHUKZ-01DM	AHUKZ-02DM	AHUKZ-02DM	AHUKZ-03DM	AHUKZ-03DM	AHUKZ-03DM	AHUKZ-03DM	AHUKZ-03DM	AHUKZ-02DM + AHUKZ-02DM				
Outdoor unit				MDV-V180W/RN1	MVi-200WV2RN1(A)	MVi-260WV2RN1(A)	MVi-335WV2RN1(A)	MDV-V400W/DRN1	MDV-V450W/DRN1	MV6-i500WV2GN1-E	MV6-i560WV2GN1-E	MV6-i615WV2GN1-E				
Outdoor unit power supply (V/phase/Hz)				380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50				
Coil module power supply (V/phase/Hz)				220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50				
Version				Reversible heat pump												
Cooling	Capacity	Rated	kW	17.5	20.0	26.0	33.5	40.0	45.0	50.0	56.0	61.5				
		Min-Max	kW	-	-	-	-	-	-	-	-	-				
	Rated input power		kW	5.30	6.35	8.13	15.09	15.09	13.55	14.70	16.00	20.20				
	EER		kW/kW	3.30	3.15	3.20	2.22	2.65	3.32	3.40	3.50	3.04				
Heating	Capacity	Rated	kW	19.0	22.0	28.5	33.5	40.0	45.0	50.0	56.0	61.5				
		Min-Max	kW	-	-	-	-	-	-	-	-	-				
	Rated input power		kW	5.00	6.20	7.22	7.94	10.00	11.11	12.20	13.80	17.60				
	COP		kW/kW	6.70	3.55	3.95	4.22	4.00	4.05	4.10	4.06	3.49				
Airflow			m³/min	113.0	150.0	175.0	188	276.0	276.0	217.0	283.0	283.0				
Sound pressure level			dB(A)	59	58	59	61	62	62	65	66	66				
Dimensions (width x depth x height)			mm	900×320×1327		1120×528×1558		1360×540×1650		1460×540×1650		1340×850×1635				
Transport dimensions (width x depth x height)			mm	1030×435×1456		1270×565×1720		1450×560×1785		1550×560×1785		1405×910×1805				
Weight (net/gross)			kg	107.0/118.0		143.0/159.0		144.0/160.0		157.0/173.0		250.0/268.0	280.0/300.0	295.0/322.0	344.0/364.0	344.0/364.0
Refrigerant	Type			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A			
	Charged amount	kg		4.50	6.50	6.50	8.00	9.00	12.00	13.00	17.00	17.00				
Refrigerant installation	Liquid/gas	mm		Ø9.52 / Ø19.1	Ø9.52 / Ø19.1	Ø9.52 / Ø22.2	Ø12.7 / Ø25.4	Ø12.7 / Ø22.2	Ø12.7 / Ø25.4	Ø19.1 / Ø31.8	Ø19.1 / Ø31.8	Ø19.1 / Ø31.8				
	Maximum length	m		60	60	150	150	100	100	175	175	175				
	Maximum height difference	m		30	50	50	50	30	30	110	110	110				
Recommended electrical wiring and protections	Power supply cord	mm²		5×4.0	5×4.0	5×4.0	5×4.0	5×4.0	5×4.0	5×6.0	5×6.0	5×10.0				
	Fuse	A		25	25	32	32	60	60	50	50	63				
Recommended operating temperature ranges (outdoor)		Cooling	°C	-15 ~ 55	-15 ~ 55	-15 ~ 55	-15 ~ 55	-15 ~ 55	-15 ~ 55	-5 ~ 48	-5 ~ 48	-5 ~ 48				
		Heating	°C	-25 ~ 27	-25 ~ 27	-25 ~ 27	-25 ~ 27	-25 ~ 27	-25 ~ 27	-23 ~ 24	-23 ~ 24	-23 ~ 24				

Capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB/24°C WB. Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB/6°C WB. Installation length: length of connected pipes is 75 m, the height difference is 0. The unit contains fluorinated greenhouse gases (R410A, GWP=2088). For the proper operation of outdoor units in the heat pump mode, it is necessary to apply a drain pan heater or provide smooth condensate drain in another manner. Choice of the appropriate solution is a matter for installer.



Technical specifications

Set				AHU-KIT670-B3	AHU-KIT730-B3	AHU-KIT785-B3	AHU-KIT850-B3	AHU-KIT900-B3
Coil module				AHUKZ-02DM + AHUKZ-02DM	AHUKZ-02DM + AHUKZ-03DM	AHUKZ-02DM + AHUKZ-03DM	AHUKZ-02DM + AHUKZ-03DM	AHUKZ-02DM + AHUKZ-03DM
Outdoor unit				MV6-i670WV2GN1-E	MV6-i730WV2GN1-E	MV6-i785WV2GN1-E	MV6-i850WV2GN1-E	MV6-i900WV2GN1-E
Outdoor unit power supply (V/phase/Hz)				380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Coil module power supply (V/phase/Hz)				220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Version				Reversible heat pump				
Cooling	Capacity	Rated	kW	67.0	73.0	78.5	85.0	90.0
		Min-Max	kW	-	-	-	-	-
	Rated input power		kW	21.60	21.60	24.90	28.30	32.10
	EER		kW/kW	3.10	3.38	3.15	3.00	2.80
Heating	Capacity	Rated	kW	67.0	73.0	78.5	85.0	90.0
		Min-Max	kW	-	-	-	-	-
	Rated input power		kW	16.80	18.10	21.80	24.30	26.50
	COP		kW/kW	3.99	4.03	3.60	3.50	3.40
Airflow			m³/min	417.0	417.0	417.0	400.0	400.0
Sound pressure level			dB(A)	67	68	68	68	68
Dimensions (width x depth x height)			mm	1730×850×1830	1730×850×1830	1730×850×1830	1730×850×1830	1730×850×1830
Transport dimensions (width x depth x height)			mm	1800×910×2000	1800×910×2000	1800×910×2000	1800×910×2000	1800×910×2000
Weight (net/gross)			kg	407.0/430.0	429.0/452.0	429.0/452.0	475.0/507.0	475.0/507.0
Refrigerant	Type			R410A	R410A	R410A	R410A	R410A
	Charged amount		kg	22.00	22.00	22.00	25.00	25.00
Refrigerant installation	Liquid/gas		mm	Ø19.1 / Ø31.8	Ø22.2 / Ø31.8	Ø22.2 / Ø31.8	Ø22.2 / Ø38.1	Ø22.2 / Ø38.1
	Maximum length		m	175	175	175	175	175
	Maximum height difference		m	110	110	110	110	110
Recommended electrical wiring and protections	Power supply cord		mm²	5×10.0	5×10.0	5×10.0	5×10.0	5×10.0
	Fuse		A	63	63	63	80	80
Recommended operating temperature ranges (outdoor)		Cooling	°C	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
		Heating	°C	-23 ~ 24	-23 ~ 24	-23 ~ 24	-23 ~ 24	-23 ~ 24

Capacity is based on the following conditions:

Cooling: indoor temperature 27°C DB/19°C WB; outdoor temperature 35°C DB/24°C WB. Heating: indoor temperature 20°C DB/15°C WB; outdoor temperature 7°C DB/6°C WB. Installation length: length of connected pipes is 7.5 m, the height difference is 0. The unit contains fluorinated greenhouse gases (R410A, GWP=2088). For the proper operation of outdoor units in the heat pump mode, it is necessary to apply a drain pan heater or provide smooth condensate drain in another manner. Choice of the appropriate solution is a matter for installer.