



THERMOMARIN



Marine air conditioning systems

Product catalog

COMPANY DEVELOPMENT HISTORY

2022

Developed marine cabinet air conditioners and marine provision refrigeration units

2021

Received a certificate of company recognition from the River Register (RR).

2020

Opened a new business area: river and marine air conditioning. Started development of AVM chillers, KNS fan coils and KAM-type self-contained air conditioners.

2019

Developed and put into operation our own control board for SKIUP-type control cabinets.

2018

Expanded the SKIUP control cabinet line.
Added a line based on the PIXEL controller.

2017

Launched the SKIUP control cabinet line for supply, exhaust and supply-exhaust ventilation systems for ventilation and air conditioning on the OWEN controller platform.

2016

Started operations in the residential ventilation and air conditioning segment

2015

Year of foundation

CONTENTS

KAM



**Self-contained
local air conditioner**

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AVM



**Marine water-chilling
unit**

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KNS-II



**Marine non-autonomous air
conditioner (fan coils)
ceiling-mounted version**

14

KNS-I



**Marine non-autonomous air
conditioner (fan coils)
wall-mounted version**

24

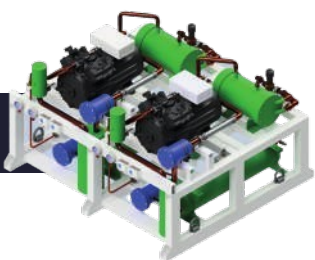
KNS-III



**Marine non-autonomous air
conditioner (fan coils)
floor-standing version**

28

MXPKS



**Marine provision
refrigeration units**

32

KASH



**Self-contained
cabinet air conditioner**

38

SKA



**Marine air conditioners
self-contained**

42

SKAM



**Marine air conditioners
self-contained modernized
cassette version**

48

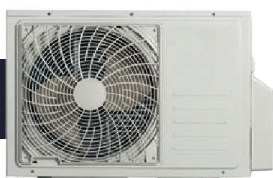
SKAM



**Marine air conditioners
self-contained modernized
ceiling-mounted version**

54

MZKS



**Marine multi-zone
air conditioners**

60

LOCAL SELF-CONTAINED AIR CONDITIONERS



Modern self-contained air conditioners for yachts, ships and other watercraft make it possible to build a high-quality climate control system on small and medium displacement vessels without straining the budget.

The cooling capacity of the air conditioners ranges from 2 kW to 14 kW.

The air conditioner can operate not only in cooling but also in heating mode in the off-season

OPERATING MODES



Dehumidification



Heating



Cooling

The controller features:

- ▶ Operation control in cooling and heating modes
- ▶ 3-speed fan rotation control
- ▶ Overload protection
- ▶ Timer control
- ▶ Built-in memory

FEATURES

- **High-efficiency GMCC Toshiba rotary compressors**

A distinctive feature of this compressor is the use of two rotors mounted on a single shaft



- **Compact tube-in-tube condenser**

Made of copper-nickel alloy with nickel content of up to 10 or 30%



- **Low-noise AC fans**

The air duct outlet can be rotated by up to 90 degrees



- **The condenser located right behind the evaporator** allows the unit to perform dehumidification, thereby keeping the air humidity at the most comfortable level

STANDARD DELIVERY SET

1. Wired control panel
2. USB connection cable
3. Power control cabinet

4. Remote temperature sensor
5. Set of mounting brackets
6. Mounting tape





AIR CONDITIONERS LOCAL SELF-CONTAINED

KAM MODELS 06 - 48

220V power supply

Model			KAM-06	KAM-08	KAM-12	KAM-18	KAM-24	KAM-36	KAM-48
Air flow	High	m³/h	380	500	600	950	1 200	1 700	2 300
	Medium	m³/h	300	400	500	800	1 000	1 550	2 000
	Low	m³/h	220	320	410	600	800	1 200	1 850
Static pressure		Pa	50	50	60	100	180	200	200
Dehumidification		l/h	0,7	1,0	1,8	2,3	3,1	4,9	5,6
Cooling capacity BTU/h			6 000	8 000	12 000	18 000	24 000	36 000	48 000
		kW	1,9	2,7	3,9	5,3	7,0	10,6	14,1
Power consumption (cooling)		kW	0,5	0,8	1	1,4	1,8	2,8	3,4
Operating current		A	3	4	5	7	8	13	16
Heating capacity		BTU/h	5 500	9 500	13 500	20 000	27 500	42 500	51 500
		kW	1,6	2,7	3,9	5,9	8,1	13	15,1
Power consumption (heating)		kW	0,7	0,8	1,2	1,7	2,3	3,2	4,1
Operating current		A	3,1	4	6	8	10	15	19
Starting current		A	8,0	12,0	19,0	25	30	45	60
Power supply			220 V						
Cooling water flow		m³/h	0,5	0,6	0,9	1,3	1,8	2,7	3,6
Hydraulic resistance		kPa	15	15	15	15	20	23	25
Condenser connection size (C)		mm	15	15	15	20	20	20	20
Duct connection size		ø	100	100	125	150	200	200	250
Refrigerant			R410A						
Refrigerant charge		g	260	300	400	600	950	1 100	1 800
Overall dimensions	Length (D)	mm	400	400	480	550	605	645	750
	Width (H)	mm	280	280	298	398	458	460	460
	Height (L)	mm	238	238	285	345	400	440	480
Noise level		dB(A)	<45	<51	<51	<57	<62	<69	<71
Net weight		kg	18	26	30	41	56	66	78
Operating weight		kg	19	27	32	49	58	78	91

Note:

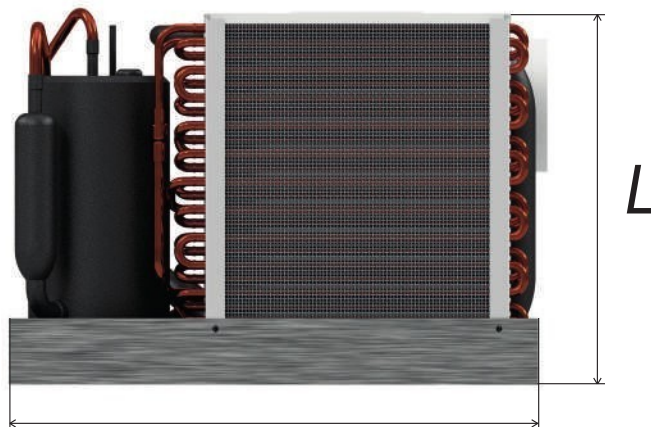
1. Cooling and heating capacity tolerance +/- 10%;
2. Power consumption tolerance +/- 10%.

OVERALL DIMENSIONS

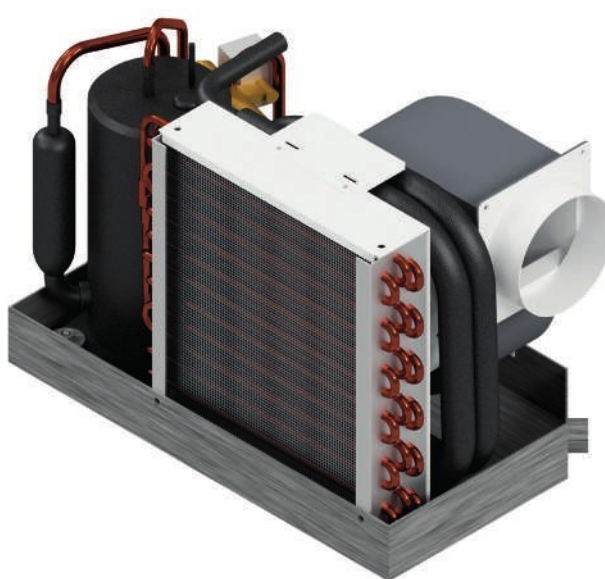
OF THE LOCAL SELF-CONTAINED AIR CONDITIONER



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**AIR CONDITIONERS
LOCAL SELF-CONTAINED**

KAM MODELS 06 - 12

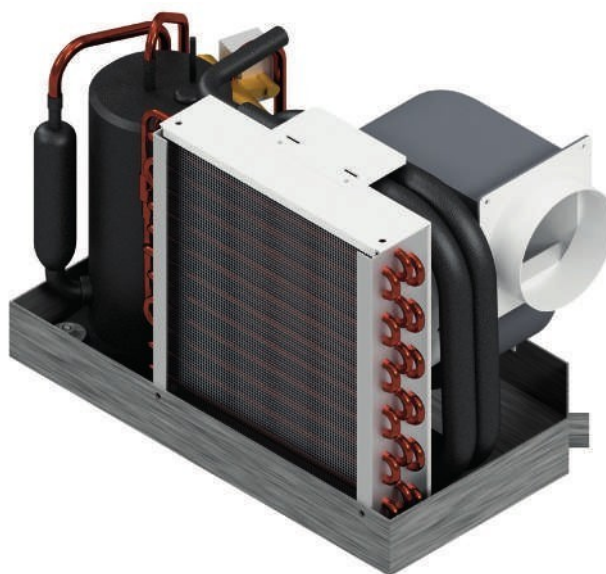
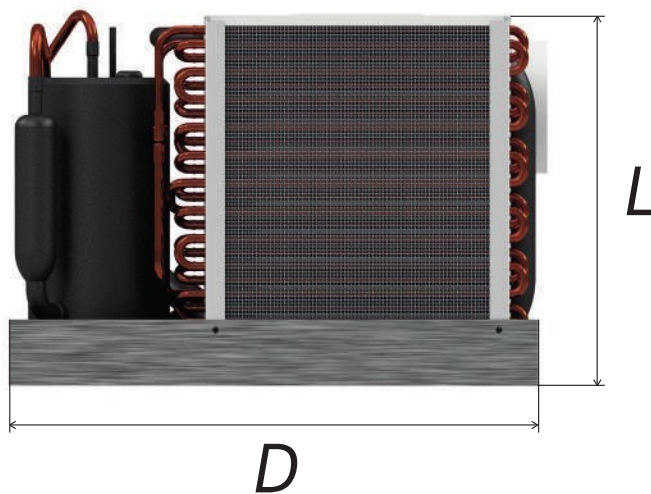
			12V power supply		24V power supply	
Model			KAM-06-12V	KAM-12-12V	KAM-08-24V	KAM-12-24V
Air flow	High	m³/h	380	600	500	600
	Medium	m³/h	300	500	400	500
	Low	m³/h	220	410	320	410
Static pressure		Pa	50	60	50	60
Dehumidification		l/h	0,8	1,0	0,8	1,2
Cooling capacity		kW	2,1	3,5	2,3	3,5
Power consumption (cooling)		kW	0,5	0,6	0,6	0,7
Operating current		A	35	50	23	30
Heating capacity		BTU/h	0	0	0	0
		kW	2,3	3,8	2,5	3,8
Power consumption (heating)		kW	0,6	0,8	0,6	0,8
Operating current		A	45	65	25	35
Starting current		A	45	65	25	35
Power supply			12V		24V	
Cooling water flow		m³/h	0,6	0,9	0,6	0,9
Hydraulic resistance		kPa	15	15	15	15
Condenser connection size (C)		mm	15	15	15	15
Duct connection size		Ø	100	125	100	125
Refrigerant			r134a		r134a	
Refrigerant charge		g	260	400	300	400
Overall dimensions	Length (D)	mm	400	480	400	480
	Width (H)	mm	280	300	280	300
	Height (L)	mm	238	285	238	285
Noise level		dB(A)	50	50	51	50
Net weight		kg	18	23	18	23
Operating weight		kg	19	25	19	25

Note:

1. Cooling and heating capacity tolerance +/- 10%;
2. Power consumption tolerance +/- 10%.

OVERALL DIMENSIONS

OF THE LOCAL SELF-CONTAINED AIR CONDITIONER

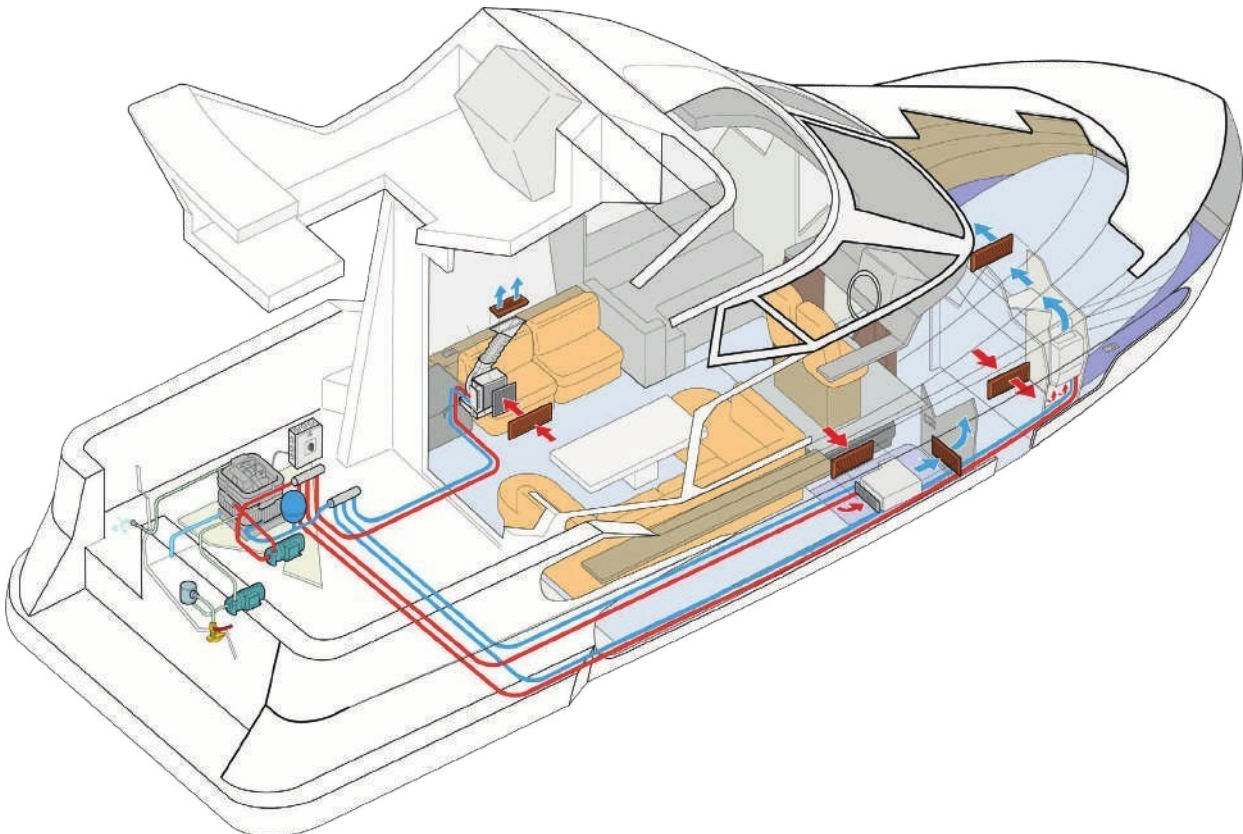


MARINE WATER-CHILLING UNITS



The chiller is the heart of a vessel's cooling system, and the quality of life of all passengers and crew depends on this "heart".

The available space and the capacity of the vessel's power systems impose their own constraints, so chillers for marine vessels must be compact in size and highly energy efficient. Such chillers not only save space on board but also consume less energy, which in turn reduces the wear on the generator.



ADVANTAGES

- **Durability**

the design uses time-proven, highly efficient compressors of established reliability. The condenser is made of CuNi10, CuNi30 alloy or titanium, allowing the chiller to operate for 10 years. The drain pan is made of stainless steel.

- **Easy and flexible installation**

The small dimensions of individual modules, not exceeding 600×350 mm, allow the machine to be assembled on an already built vessel, combining up to 5 modules into a single system and obtaining the cooling you need, up to 450 kW.

- **Flexible settings**

Supplied with a wired control panel that can be installed up to 10 meters away from the chiller.

- **Safety**

The standard configuration includes low and high pressure protection, evaporator freeze protection, water flow switches for the evaporator and condenser, etc.

STANDARD UNIT CONFIGURATION

1. Compressor
2. Control cabinet
3. Tube-in-tube condenser
4. Plate evaporator

5. Thermostatic expansion valve
6. 4-way valve
7. High and low pressure switches
8. Flow switch

STANDARD DELIVERY SET:

1. Chiller
2. Controller

3. Control cabinet
4. Evaporator flow switch



MARINE WATER- CHILLING UNITS

AVM MODELS 48 - 240

Model		AVM-48	AVM-60	AVM-72	AVM-96	AVM-120	AVM-180	AVM-240
Cooling capacity	kW	14	18	21	28	35	53	70
Power consumption (cooling)	kW	3,4	4,2	5,1	6,8	8,5	12,8	16,2
Operating current (cooling)	A	7	8	10	13	15	24	30
Heating capacity	kW	16,4	21,4	23,2	33,9	42,8	67,7	82,6
Power consumption (heating)	kW	4,2	5,8	6,2	8,8	11,3	16,9	22,2
Operating current (heating)	A	8	12	12	15	20	29	39
Starting current	A	32	40	42	58	65	90	120
Power supply		380V						
Cooling water flow	m³/h	3,6	5	6,2	7,6	9,2	15,1	18,5
Chilled water flow	m³/h	2,8	3,2	4,4	5,7	6,5	11,5	13,5
Hydraulic resistance of evaporator	kPa	25	35	35	35	40	42	55
Hydraulic resistance of condenser	kPa	10	10	10	15	15	15	20
Condenser connection size	mm	25	32	32	32	32	40	40
Evaporator connection size	mm	25	32	32	40	40	40	40
Refrigerant		R407C						
Refrigerant charge	g	1 100	1 800	1 880	2 500	4 500	5 500	9 000
Overall dimensions	Length (D)	mm	500	600	600	780	780	780
	Width (L)	mm	550	610	610	705	705	705
	Height (H)	mm	350	350	350	480	480	480
Noise level	dB(A)	61	71	71	71	74	74	74
Net weight	kg	96	105	126	157	196	276	351
Operating weight	kg	105	120	145	172	220	310	395

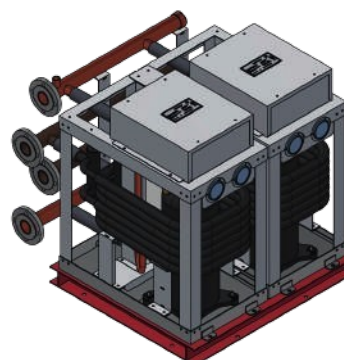
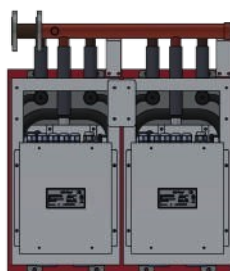
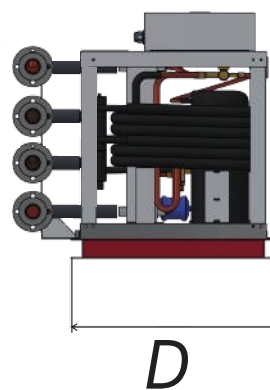
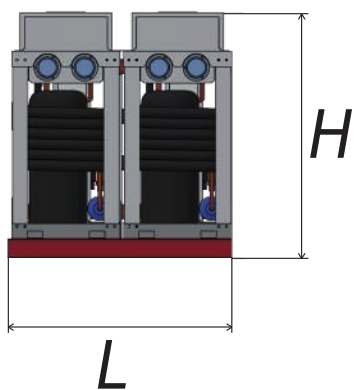
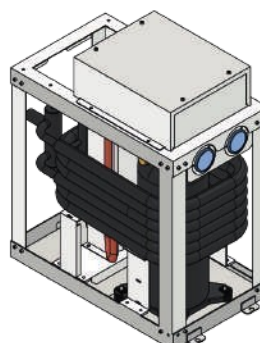
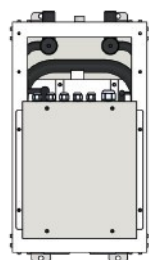
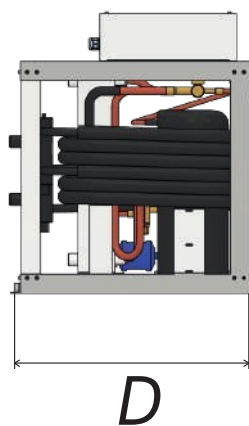
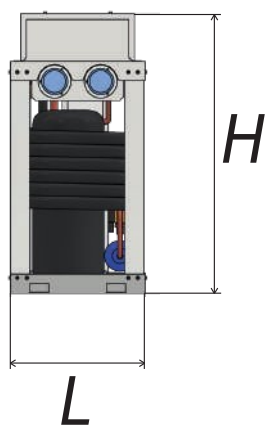
Note

Technical specifications are given under the following conditions:

1. Condenser inlet water temperature = 4°C to 34°C;
2. Condenser outlet water temperature = 9°C to 39°C;
3. Inlet water temperature = 12°C;
4. Outlet water temperature = 7°C.

OVERALL DIMENSIONS

OF THE MARINE WATER-CHILLING UNIT



MARINE NON-AUTONOMOUS AIR CONDITIONERS (FAN COILS)



CEILING-MOUNTED VERSION

ThermoMarin fan coils feature:

- High efficiency;
- Compact size;
- Designed for a long service life.

Their design uses a high-**efficiency evaporator** with fins covered with a special anti-corrosion coating and a drain pan made of stainless steel.

The fan coil casing is additionally insulated, which keeps the noise level comfortable during operation.

OPERATING MODES



Dehumidification



Heating



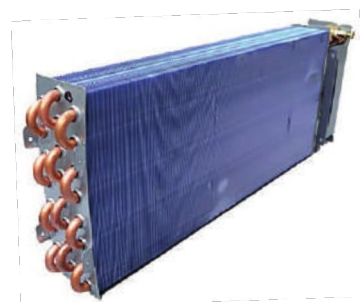
Cooling

The controller features:

- ▶ Operation control in cooling and heating modes
- ▶ 3-speed fan rotation control
- ▶ Overload protection
- ▶ Timer control
- ▶ Built-in memory

ADVANTAGES

- **Low-noise AC fans**
- **Highly efficient**
- **Complete package**
A drain pump and a stainless steel drain pan are included in the standard delivery set
- **Easy to install**
- **High-efficiency evaporator**
Evaporator fins are covered with a special anti-corrosion coating using BLUE-FIN technology



STANDARD DELIVERY SET

1. Wired control panel
2. USB connection cable
3. Power control cabinet

4. Remote temperature sensor
5. Mounting tape





NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

KNS-II MODELS

2-pipe

Model			KNS-II-04	KNS-II-06	KNS-II-10	KNS-II-12	KNS-II-14
Air flow	High	m ³ /h	150	165	240	270	600
	Medium	m ³ /h	125	135	195	220	550
	Low	m ³ /h	100	110	160	180	500
Static pressure		Pa	30	30	30	30	50
Cooling capacity		kW	1,1	1,7	2,6	3,5	4,5
Heating capacity		kW	1,3	1,9	2,9	3,8	4,5
Electric heater		kW	1	1	2	2	2
Power supply			220 V				
Power consumption (without el. heater)		W	40	55	62	80	100
Cooling water flow		m ³ /h	0,4	0,4	0,6	0,8	1,0
Hydraulic resistance		kPa	<30	<30	<30	<30	30
Water connection size		mm	20	20	20	20	20
Drain connection size		mm	20	20	20	20	20
Overall dimensions	Length (D)	mm	490	490	560	560	620
	Width (H)	mm	230	230	230	230	230
	Height (L)	mm	522	522	522	522	522
Noise level		dB(A)	38	40	40	42	42
Net weight		kg	14	17	20	22	24
Operating weight		kg	15	18	21	24	26

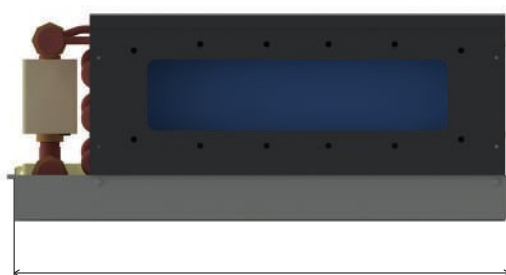
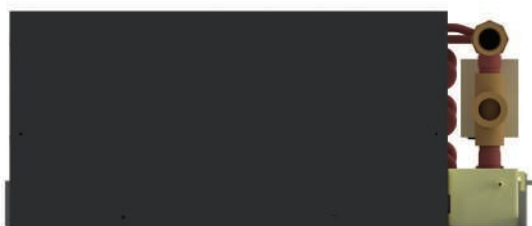
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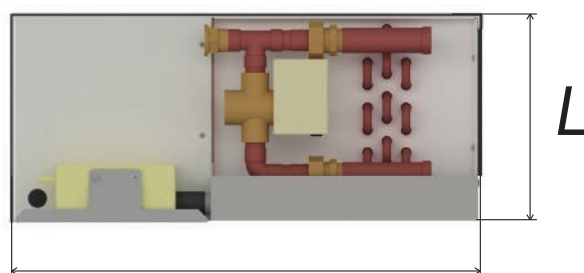
1. Inlet air temperature (cooling mode) = 27°C;
2. Relative humidity = 60%;
3. Inlet water temperature = 7°C;
4. Outlet water temperature = 12°C.

OVERALL DIMENSIONS

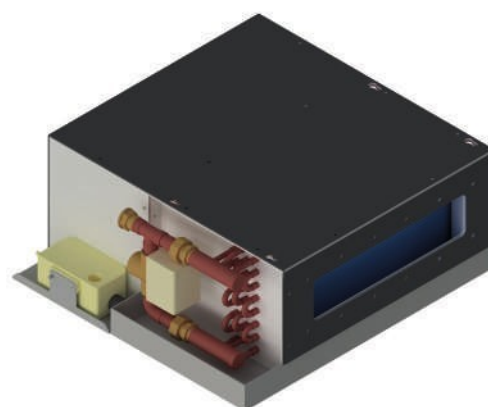
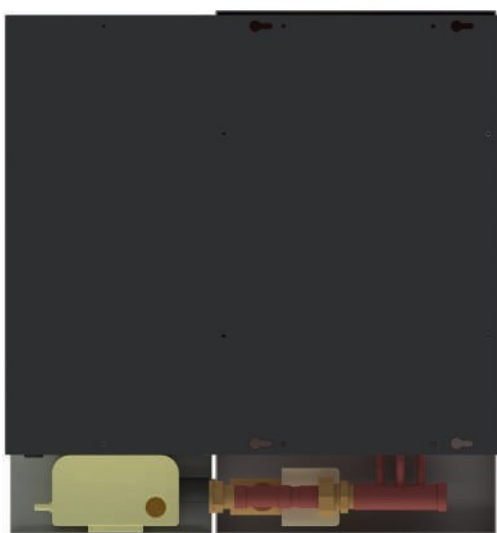
OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER



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NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

KNS-II MODELS

2-pipe

Model			KNS-II-16	KNS-II-18	KNS-II-24	KNS-II-36	KNS-II-42
Air flow	High	m³/h	800	1 050	1 250	1 550	1 750
	Medium	m³/h	600	900	1 000	1 250	1 550
	Low	m³/h	550	850	950	1 000	1 250
Static pressure		Pa	50	50	50	50	50
Cooling capacity		kW	4,5	5,2	7,0	10,0	12,5
Heating capacity		kW	6,4	7,6	9,4	11,5	14,0
Electric heater		kW	2	2	2	4	6
Power supply			220V				
Power consumption (without el. heater)		W	140	190	250	290	380
Cooling water flow		m³/h	1,2	1,2	1,2	1,9	2,4
Hydraulic resistance		kPa	30	30	30	30	30
Water connection size		mm	20	20	20	20	20
Drain connection size		mm	20	20	20	20	20
Overall dimensions	Length (D)	mm	620	850	1 000	1 200	1 350
	Width (H)	mm	230	230	230	230	230
	Height (L)	mm	522	522	522	522	522
Noise level		dB(A)	43	42	42	45	45
Net weight		kg	24	28	30	33	35
Operating weight		kg	26	30	32	35	37

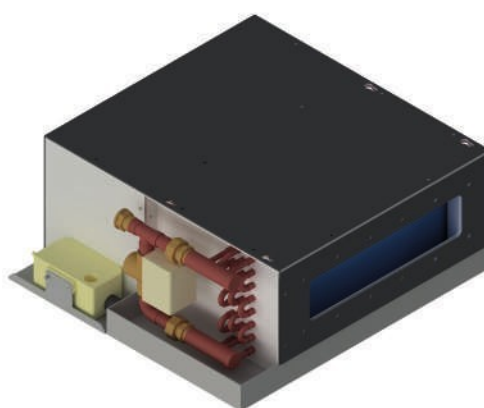
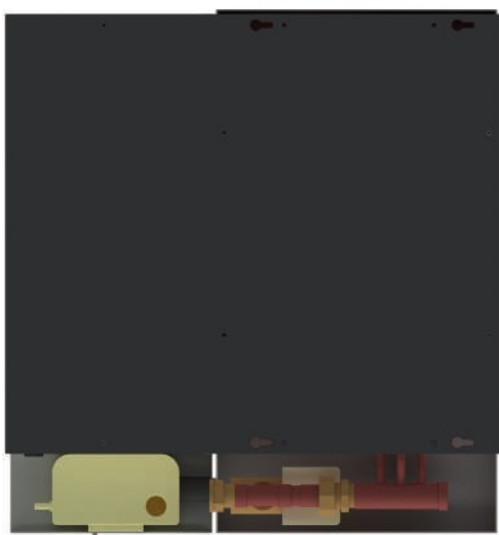
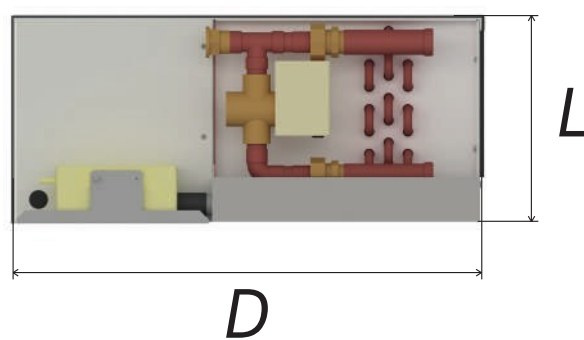
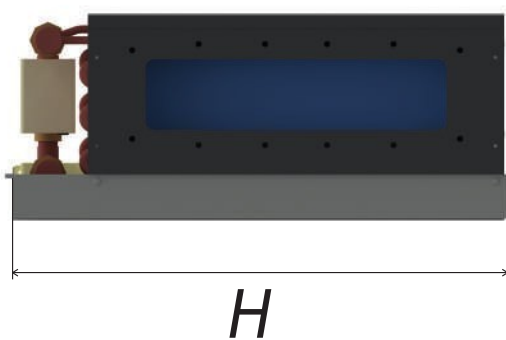
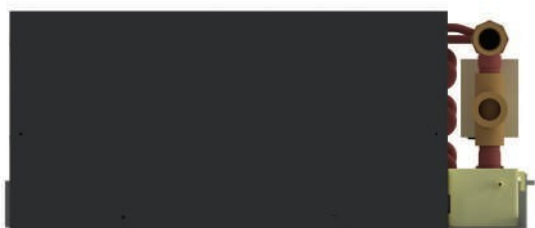
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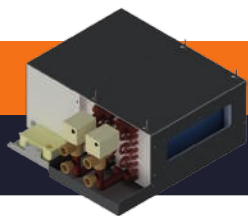
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3. Inlet water temperature = 7°C;
4. Outlet water temperature = 12°C.

OVERALL DIMENSIONS

OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER





NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

2KNS-II MODELS

4-pipe

Model			2KNS-II-04	2KNS-II-06	2KNS-II-10	2KNS-II-12	2KNS-II-14
Air flow	High	m³/h	150	165	240	270	600
	Medium	m³/h	125	135	195	220	550
	Low	m³/h	100	110	160	180	500
Static pressure		Pa	30	30	30	30	50
Cooling capacity		kW	1,1	1,7	2,6	3,5	4,5
Heating capacity		kW	1,3	1,9	2,9	3,8	5,2
Electric heater		kW	-	-	-	-	-
Power supply			220V				
Power consumption (without el. heater)		W	40	55	62	80	100
Chilled water flow		m³/h	0,4	0,4	0,6	0,8	1,0
Hydraulic resistance		kPa	30	30	30	30	30
Water connection size		mm	20	20	20	20	20
Drain connection size		mm	20	20	20	20	20
Overall dimensions	Length (D)	mm	590	590	660	660	750
	Width (H)	mm	522	522	522	522	522
	Height (L)	mm	238	238	238	238	238
Noise level		dB(A)	38	40	40	42	42
Net weight		kg	16	19	22	24	26
Operating weight		kg	18	21	24	26	28

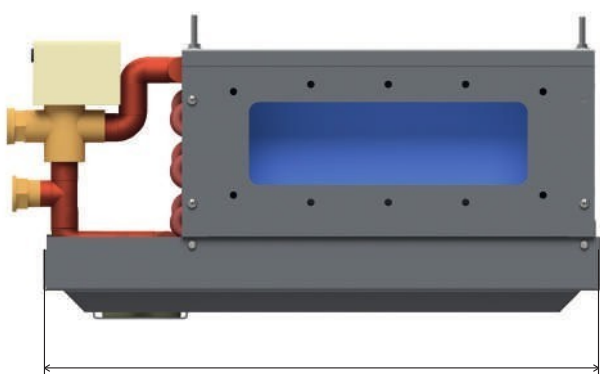
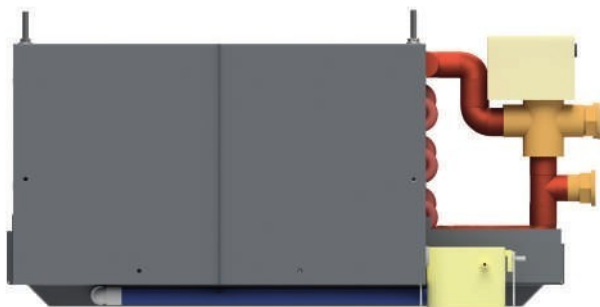
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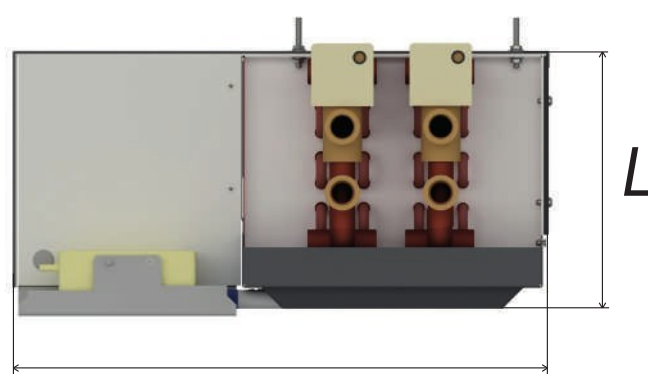
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OVERALL DIMENSIONS

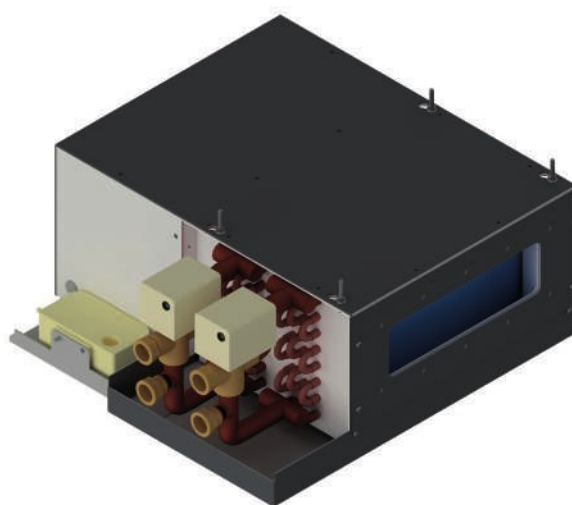
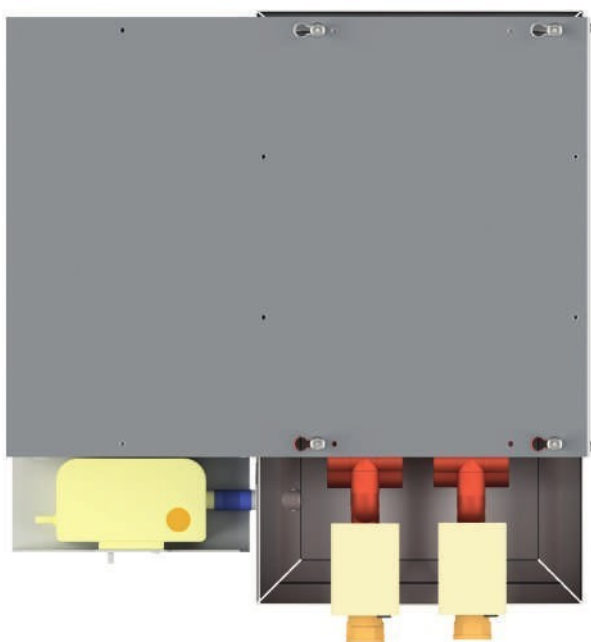
OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER

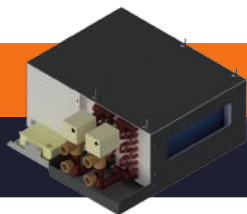


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NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

2KNS-II MODELS

4-pipe

Model			2KNS-II-16	2KNS-II-18	2KNS-II-24	2KNS-II-36	2KNS-II-42
Air flow	High	m³/h	800	1 050	1 250	1 550	1 750
	Medium	m³/h	600	900	1 000	1 250	1 550
	Low	m³/h	550	850	950	1 000	1 250
Static pressure		Pa	50	50	50	50	50
Cooling capacity		kW	4,5	5,2	7,0	10,0	12,5
Heating capacity		kW	6,4	7,6	9,4	11,5	14,0
Electric heater		kW	-	-	-	-	-
Power supply			220V				
Power consumption (without el. heater)		W	140	182	252	290	380
Water flow		m³/h	1,2	1,2	1,2	19,0	2,4
Hydraulic resistance		kPa	30	30	30	30	30
Water connection size		mm	20	20	20	20	20
Drain connection size		mm	20	20	20	20	20
Overall dimensions	Length (D)	mm	820	900	1 100	1 300	1 450
	Width (H)	mm	522	522	522	522	522
	Height (L)	mm	238	238	238	238	238
Noise level		dB(A)	43	42	42	45	45
Net weight		kg	26	30	32	35	37
Operating weight		kg	28	32	34	37	39

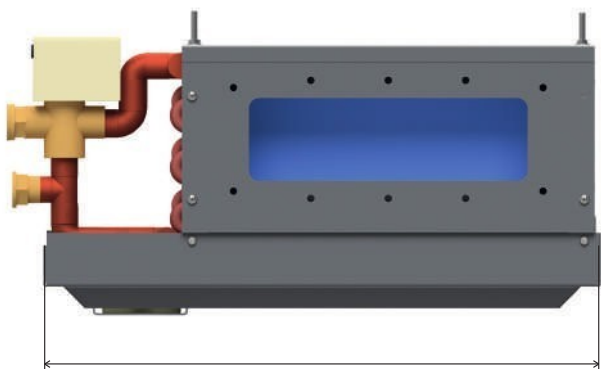
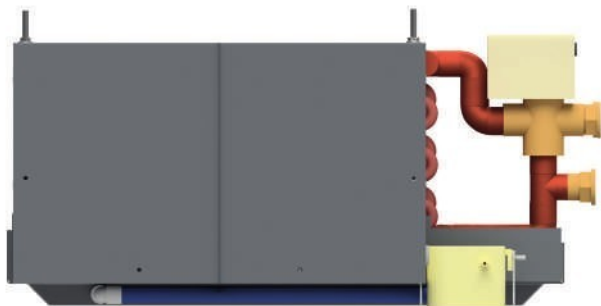
Note

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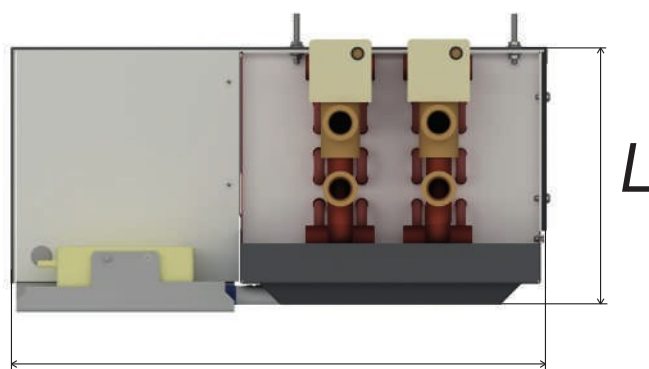
1. Inlet air temperature (cooling mode) = 27°C;
2. Relative humidity = 60%;
3. Inlet water temperature = 7°C;
4. Outlet water temperature = 12°C.

OVERALL DIMENSIONS

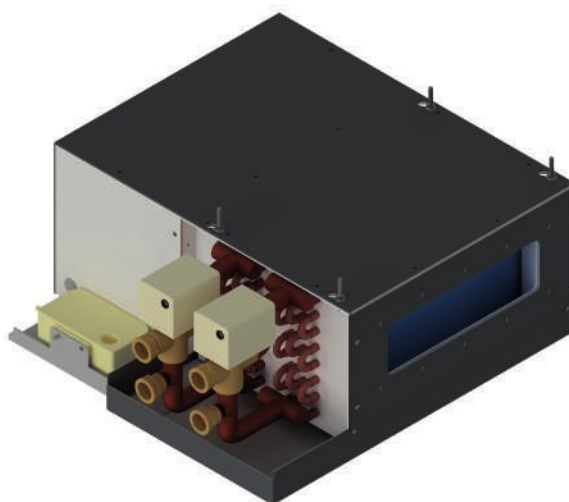
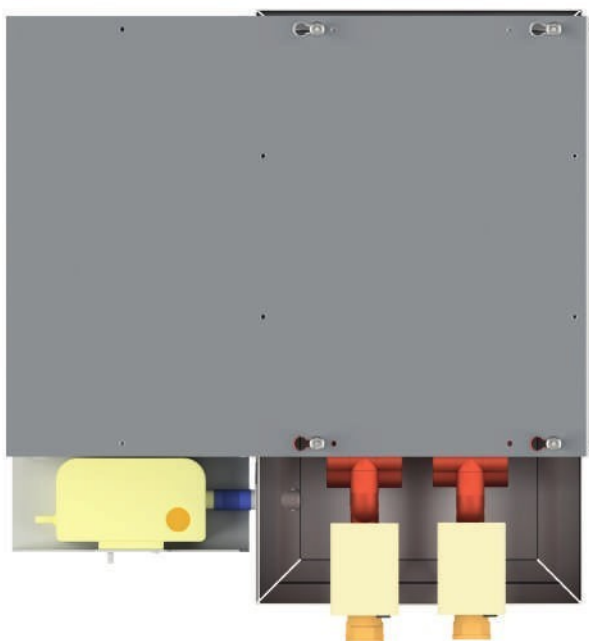
OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER



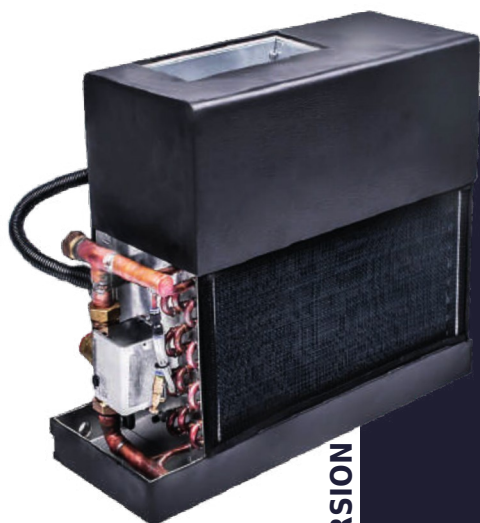
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MARINE NON-AUTONOMOUS AIR CONDITIONERS (FAN COILS)



WALL-MOUNTED VERSION

Marine climate systems are a complex mechanism in which each part performs its own separate function. While the chiller is directly responsible for maintaining the coolant temperature in the system, it is the fan coil that **delivers this temperature into the room**, making it more comfortable for crew and passengers. The noise level varies depending on the model type and capacity.

OPERATING MODES



Dehumidification



Heating



Cooling

The controller features:

- ▶ Operation control in cooling and heating modes
- ▶ 3-speed fan rotation control
- ▶ Overload protection
- ▶ Timer control
- ▶ Built-in memory

ADVANTAGES

- **Efficiency**

The ratio of energy consumption to the volume of the cooled space.

- **Compactness**

Given the limited space on board, every centimeter is worth its weight in gold.

- **Durability and resistance**

to environmental impacts. It's simple: the longer the unit lasts, the less often it needs replacing

- **Low noise level**

Since climate control systems on a ship run almost constantly, the noise level must stay within comfortable limits for those in the room.

- **Easy installation and maintenance**

Simple installation and easily replaceable fan coil filters throughout the entire service life save dozens of hours on maintenance.

STANDARD DELIVERY SET

1. Wired control panel

2. USB connection cable

3. Power control cabinet

4. Remote temperature sensor

5. Set of mounting brackets

6. Mounting tape





NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

KNS-I MODELS

Model			KNS-I-04	KNS-I-06	KNS-I-10	KNS-I-12	KNS-I-18	KNS-I-24	KNS-I-36	KNS-I-42
Air flow	High	m ³ /h	150	165	240	270	1 050	1 250	1 550	1 750
	Medium	m ³ /h	125	135	195	220	900	1 000	1 250	1 550
	Low	m ³ /h	100	110	160	180	850	950	1 000	1 250
Static pressure		Pa	30	30	30	30	50	50	50	50
Cooling capacity		kW	1,1	1,7	2,6	3,5	5,2	7,0	10,0	12,5
Heating capacity		kW	1,3	1,9	2,9	3,8	7,6	9,4	11,5	14,0
Electric heater		kW	1	1	2	2	2	2	4	6
Power supply			220V							
Power consumption (without el. heater)		W	40	55	62	80	182	260	290	380
Chilled water flow		m ³ /h	0,4	0,4	0,6	0,8	1,2	1,2	1,9	2,4
Hydraulic resistance		kPa	30	30	30	30	30	30	30	30
Water connection size		mm	20	20	20	20	20	20	20	20
Drain connection size		mm	20	20	20	20	20	20	20	20
Overall dimensions	Length (D)	mm	480	480	480	560	730	844	1 130	1 256
	Height (L)	mm	450	450	450	450	450	450	450	450
	Width (H)	mm	205	205	205	205	205	205	205	205
Noise level		dB(A)	38	40	40	42	42	42	45	45
Net weight		kg	14	17	20	22	28	30	33	35
Operating weight		kg	15	18	21	24	30	32	35	37

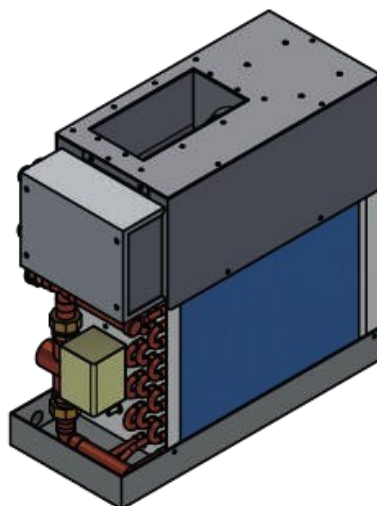
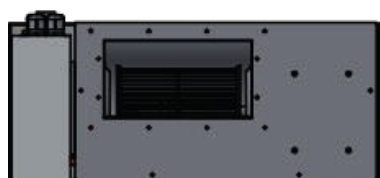
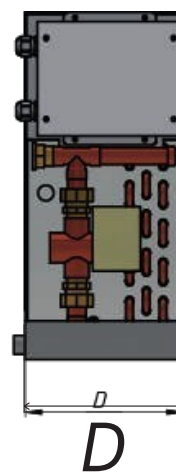
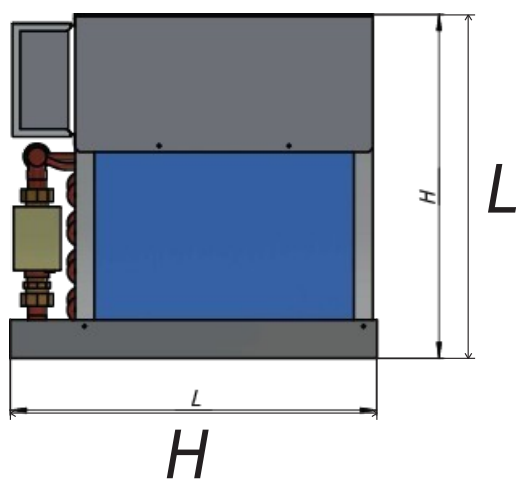
Note

Technical specifications are given under the following conditions:

1. Inlet air temperature (cooling mode) = 27°C;
2. Relative humidity = 60%;
3. Inlet water temperature = 7°C;
4. Outlet water temperature = 12°C.

OVERALL DIMENSIONS

OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER



MARINE NON-AUTONOMOUS AIR CONDITIONERS (FAN COILS)



FLOOR-STANDING VERSION

Every fan coil manufactured by ThermoMarin can be fitted with an electric heater to expand the climate control capabilities. Regardless of the chosen model, a touch control panel is included, **which can be installed up to 10 meters away from the fan coil.**

OPERATING MODES



Dehumidification



Heating



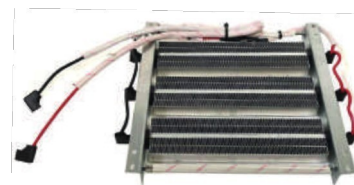
Cooling

The controller features:

- ▶ Operation control in cooling and heating modes
- ▶ 3-speed fan rotation control
- ▶ Overload protection
- ▶ Timer control
- ▶ Built-in memory

FEATURES

- **Easily replaceable filter**
- **Drain pan**
made of stainless steel
- **Electric heater**
Can be supplied optionally
- **Low-noise AC fans**
with the ability to change the air flow direction by 90 degrees
- **Supplied with a touch control panel**
which can be installed up to 10 meters away from the unit



STANDARD DELIVERY SET

1. Wired control panel
2. USB connection cable
3. Power control cabinet

4. Remote temperature sensor
5. Set of mounting brackets
6. Mounting tape





NON-AUTONOMOUS MARINE AIR CONDITIONERS (FAN COILS)

KNS-III MODELS

Model			KNS-III-05	KNS-III-07	KNS-III-10	KNS-III-12	KNS-III-16	KNS-III-24	KNS-III-36
Air flow	High	m ³ /h	300	380	480	600	800	1 000	1 500
	Medium	m ³ /h	250	300	390	510	700	800	1 300
	Low	m ³ /h	180	250	300	400	550	710	1 150
Static pressure		Pa	50	50	80	80	100	150	200
Cooling capacity		kW	1,5	2,1	2,9	3,5	4,7	7,0	10,6
Heating capacity		kW	1,6	2,2	3,2	4,0	5,2	7,6	11,2
Electric heater		kW	1	1	2	2	3	4	5
Power supply			220 V						
Power consumption (without el. heater)		kW	55	100	120	150	200	220	500
Chilled water flow		m ³ /h	0,4	0,5	0,7	0,8	1,2	1,7	2,6
Hydraulic resistance		kPa	30	30	30	30	30	35	35
Water connection size		mm	15	15	15	15	15	15	25
Drain connection size		mm	15	15	15	15	20	20	20
Duct connection size		ø	100	100	125	125	150	200	200
Overall dimensions	Length (D)	mm	380	380	440	440	500	560	610
	Width (L)	mm	261	261	310	310	355	430	452
	Height (H)	mm	277	277	318	318	346	373	426
Noise level		dB(A)	50	50	50	55	55	60	60
Net weight		kg	8	9	11	12	14	22	32
Operating weight		kg	9	10	13	13	16	24	35

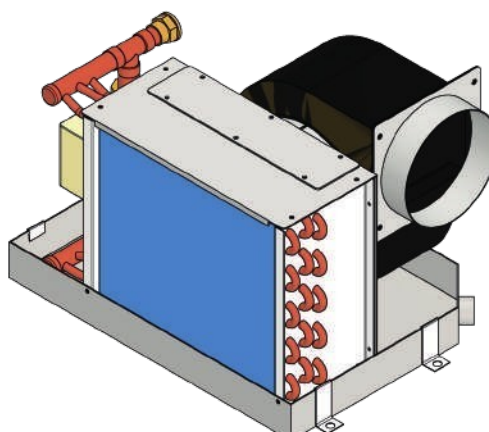
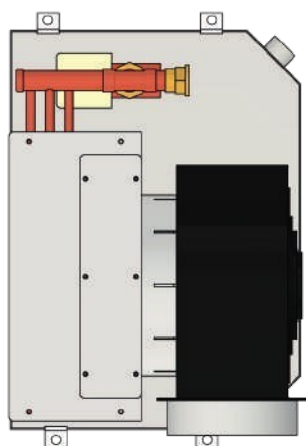
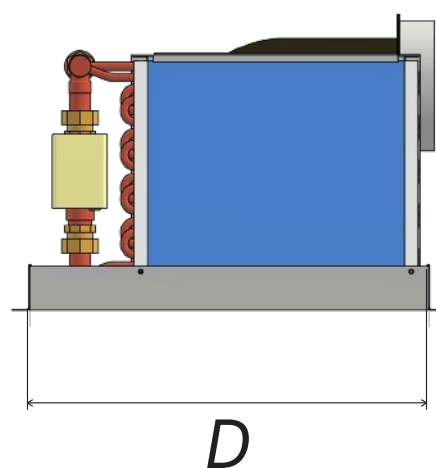
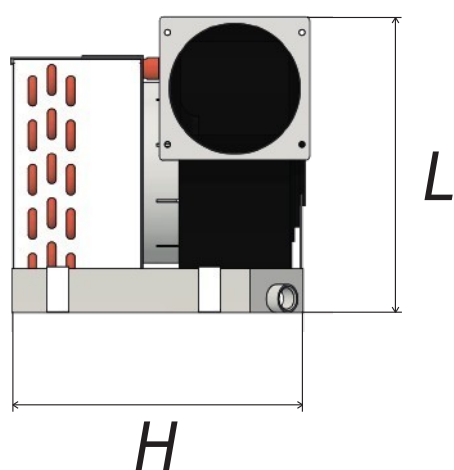
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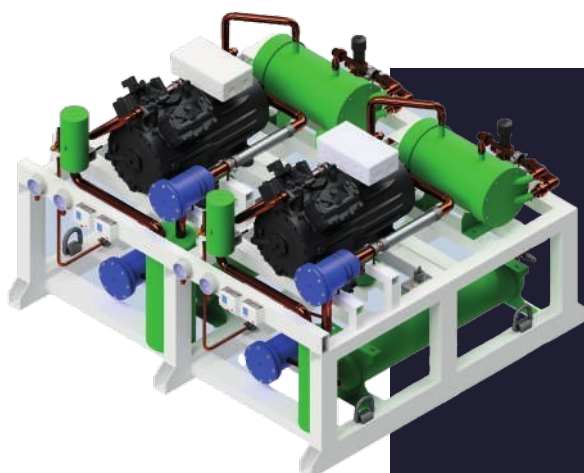
1. Inlet air temperature (cooling mode) = 27°C;
2. Relative humidity = 60%;
3. Inlet water temperature = 7°C;
4. Outlet water temperature = 12°C.

OVERALL DIMENSIONS

OF THE MARINE NON-AUTONOMOUS AIR CONDITIONER



MARINE PROVISION REFRIGERATION UNITS



Provision storerooms are designed for storing and freezing food on ships, vessels and offshore platforms.

We are ready to offer a range of refrigeration units covering 8 to 45 kW, with the ability to maintain temperatures inside the cold room from +8°C to -22°C. Nominal cooling capacity of the VO air coolers ranges from 1 kW to 15 kW

Custom design of non-standard equipment for your projects is available.

AUTOMATION

- ▶ High and low pressure protection is already included in the standard configuration
- ▶ Analog sources for monitoring low and high pressures (optional)
- ▶ Built-in compressor overheat protection
- ▶ Oil control system (optional)
- ▶ Defrost mode and drain heating (optional)
- ▶ Compressor crankcase heating (optional)

ADVANTAGES

- **Corrosion-resistant marine condenser design**

Condenser tubes are made of copper-nickel alloy with nickel content of up to 30%.

Copper tube wall thickness up to 0.8 mm.

- **Air cooler casings in the standard configuration are made of galvanized steel**

A stainless steel version is available

- **Intelligent control system**

- ▷ Oil control system (optional)

- ▷ Automatic maintenance of the set air temperature individually in each provision storeroom

- ▷ Smooth or stepped control of the cooling capacity

- ▷ Maintaining constant refrigerant condensing pressure at low seawater temperatures

- ▷ 100% unit redundancy

STANDARD DELIVERY SET

1. Refrigeration unit

2. Air coolers

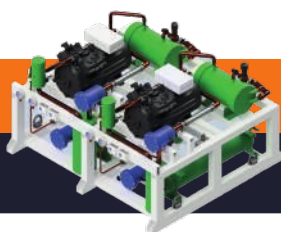
3. Control cabinet

4. Set of air coolers (optional)

5. Condensing pressure regulator (optional)

6. Mating flanges





MARINE PROVISION
REFRIGERATION UNITS

MXPKS MODELS 8 - 40

at -13°C, R134A

Model			2MXPKS-8	2MXPKS-15	2MXPKS-20	2MXPKS-25	3MXPKS-30	3MXPKS-40
Cooling capacity	kW		8	15	21	25	30	40
Maximum operating current	A		28	48	60	90	100	120
Power consumption	kW		5,24	8,74	12,46	15,12	17,48	24,92
Maximum number of consumers	pcs		up to 5	up to 5	up to 5	up to 5	up to 10	up to 10
Suction line diameter	mm		42	54	54	76	2*54	2*54
Liquid line diameter	mm		12	16	22	22	2*16	2*22
Hydraulic connection of condenser	mm		DN25	DN25	DN32	DN32	2*DN25	2*DN25
Maximum seawater temperature	°C		36					
Cooling water flow	m³/h		2,4	4,3	5,7	6,9	8,6	11,4
Overall dimensions of section without control cabinet	Length	mm	1 700	1 800	2 000	2 000	2 700	3 000
	Width	mm	1 400	1 400	1 700	1 700	1 700	1 700
	Height	mm	1 200	1 200	1 300	1 500	1 300	1 500
Overall dimensions of section with control cabinet	Length	mm	2 000	2 100	2 300	2 300	3 000	3 300
	Width	mm	1 400	1 400	1 700	1 700	1 700	1 700
	Height	mm	1 200	1 200	1 300	1 500	1 400	1 500
Weight	kg		930	1 058	1 262	643	1587	1893
Refrigerant			R134A					
Minimum chamber temperature	kg		-13					

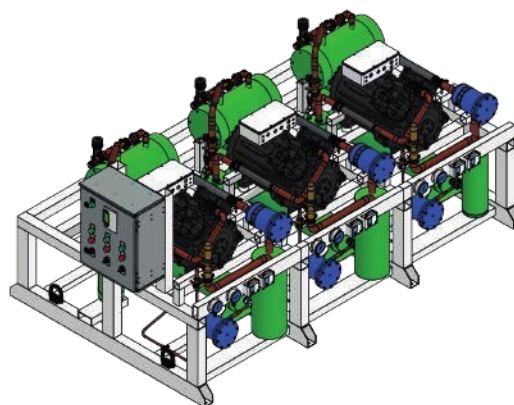
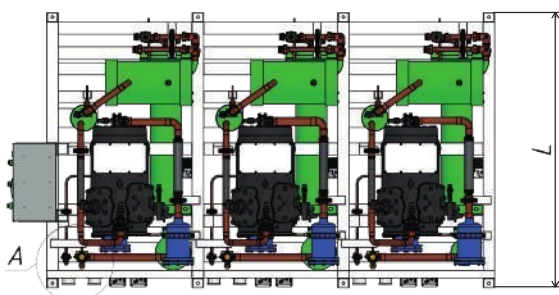
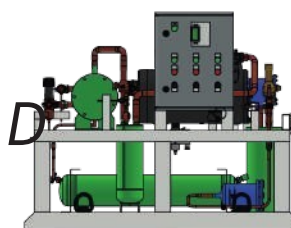
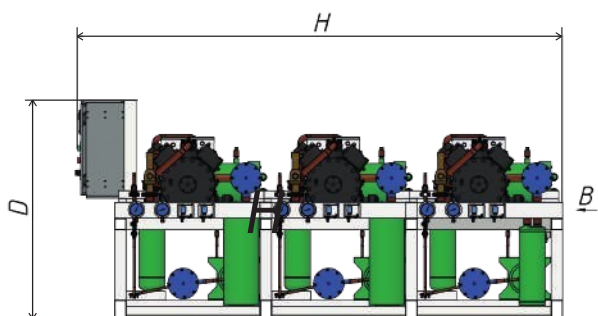
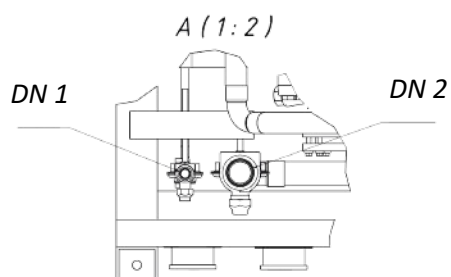
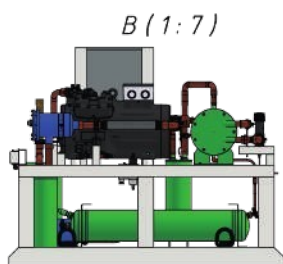
Note

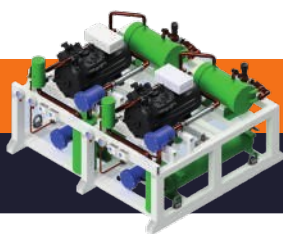
Technical specifications are given under the following conditions:

1. Evaporating temperature = -20°C;
2. Condensing temperature = 46°C;
3. Maximum seawater temperature = 36°C.

OVERALL DIMENSIONS

OF THE MARINE PROVISION REFRIGERATION UNIT





MARINE PROVISION
REFRIGERATION UNITS

MXPKS MODELS 8 - 40

at -18°C, R404A

Model			2MXPKS-8	2MXPKS-15	2MXPKS-20	2MXPKS-25	3MXPKS-30	3MXPKS-40
Cooling capacity	kW		8	15	20	25	30	40
Maximum operating current	A		20	38	45	60	76	90
Power consumption	kW		5,87	11,68	13,22	16,93	23,46	26,44
Maximum number of consumers	pcs		up to 5	up to 5	up to 5	up to 5	up to 10	up to 10
Suction line diameter	mm		35	42	54	54	2*54	2*54
Liquid line diameter	mm		16	22	22	28	2*22	2*22
Hydraulic connection of condenser	mm		DN25	DN32	DN32	DN32	2*DN32	2*DN32
Maximum seawater temperature	°C		36					
Cooling water flow	m³/h		2,4	4,8	5,7	7,4	9,6	11,4
Overall dimensions of section without control cabinet	Length	mm	1 600	1 800	2 000	2 000	2 700	3 000
	Width	mm	1 400	1 400	1 700	1 700	1 700	1 700
	Height	mm	1 200	1 200	1 300	1 500	1 300	1 500
Overall dimensions of section with control cabinet	Length	mm	2 000	2 100	2 300	2 300	3 000	3 300
	Width	mm	1 400	1 400	1 700	1 700	1 700	1 700
	Height	mm	1 200	1 200	1 300	1 500	1 300	1 500
Weight	kg		930	1 058	1 262	643	1587	1893
Refrigerant			R404A					
Minimum chamber temperature	kg		-18					

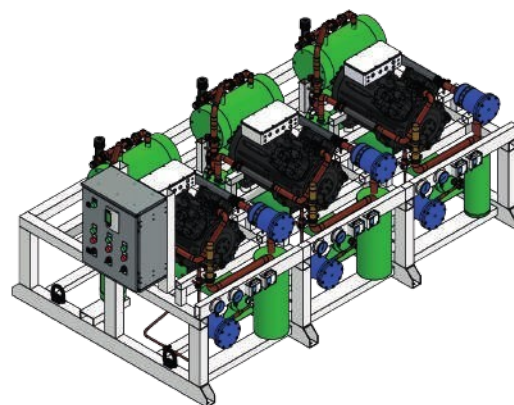
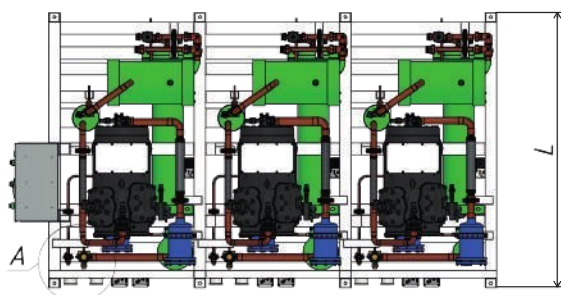
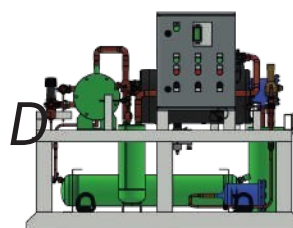
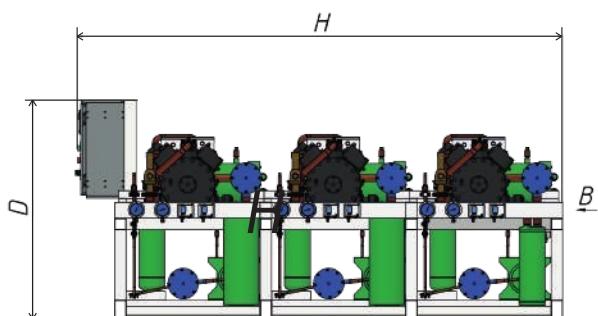
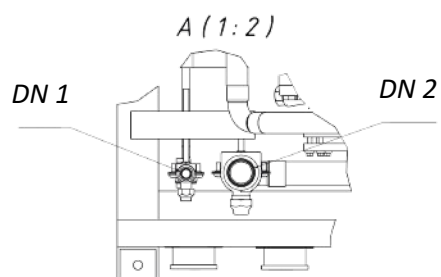
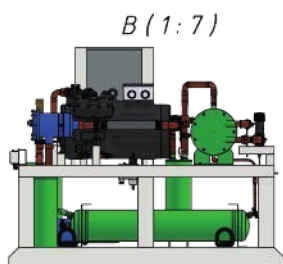
Note

Technical specifications are given under the following conditions:

1. Evaporating temperature = -25°C;
2. Condensing temperature = 46°C;
3. Maximum seawater temperature = 36°C.

OVERALL DIMENSIONS

OF THE MARINE PROVISION REFRIGERATION UNIT



SELF-CONTAINED CABINET AIR CONDITIONER



ThermoMarin marine cabinet air conditioners are designed to maintain the set temperature inside the controlled spaces of the ventilation and air conditioning systems of ships, vessels and other floating structures.

We are ready to offer a range of cabinet air conditioners with cooling capacity from 8 to 35 kW.

Custom design of non-standard equipment for your projects is available.

AUTOMATION

- ▶ The air conditioner can operate in cooling and heating modes
- ▶ High and low pressure protection is already included in the standard configuration
- ▶ Analog sources for monitoring low and high pressures (optional)
- ▶ Adjustable air flow
- ▶ Adjustable cooling capacity (optional)
- ▶ Remote control panel (optional)
- ▶ Transmission of monitoring and control signals via the Modbus RTU protocol

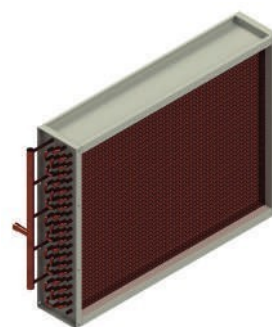
ADVANTAGES AND COMPONENTS

- **High-efficiency condenser**

- ▷ Corrosion-resistant marine condenser design
- ▷ Condenser tubes are made of copper-nickel alloy with nickel content of up to 30%
- ▷ Copper tube wall thickness up to 0.8 mm
- ▷ A condensing pressure regulator (optional)

- **High-efficiency evaporator**

- ▷ Copper tube thickness up to 0.8 mm
- ▷ Marine-grade heat exchanger fins (copper fins used instead of aluminum ones, or an epoxy film applied to the heat exchanger)



- **Compressor**

- ▷ Minimum 3-year compressor warranty
- ▷ Oil control system (optional)
- ▷ Built-in overheat protection is already included in the standard product
- ▷ The air conditioner can operate at seawater temperatures from -2°C to +38°C



STANDARD DELIVERY SET

1. Refrigeration unit
2. Built-in electric heater
3. Control cabinet

4. Air temperature sensor
5. Condensing pressure regulator
6. Mating flanges



AIR CONDITIONERS
LOCAL SELF-CONTAINED

KASH MODELS 08 - 35

Model			KASH-8	KASH-18	KASH-25	KASH-35
Cooling capacity	kW		8	18	25	35
El. heater (optional)	kW		3	9	12	15
Air flow	m³/h		1 300	3 000	4 000	5 200
Static pressure	Pa		125	150	150	400
Power consumption (compressor)	kW		2,3	4,9	7,6	5,5*2
Number of compressors	pcs		1	1	1	2
Power consumption (fan)	kW		0,25	0,38	0,55	0,9*2
Number of fans	pcs		1	1	1	2
Total power consumption (excluding el. heater)	kW		2,55	5,28	8,15	12,8
Cooling water flow	m³/h		3	5,5	8	8
Cooling water inlet temperature	°C		38	38	38	38
Power supply			380V			
Refrigerant			R407C			
Noise level	dB		54	61	65	68
Condenser connection size	DN		25	32	32	50
Condenser connection type			flange			
Net weight	kg		220	340	420	520
Overall dimensions	Length	mm	750	960	1 110	1 400
	Depth	mm	440	520	600	640
	Height	mm	1 700	1 865	1 863	1 863

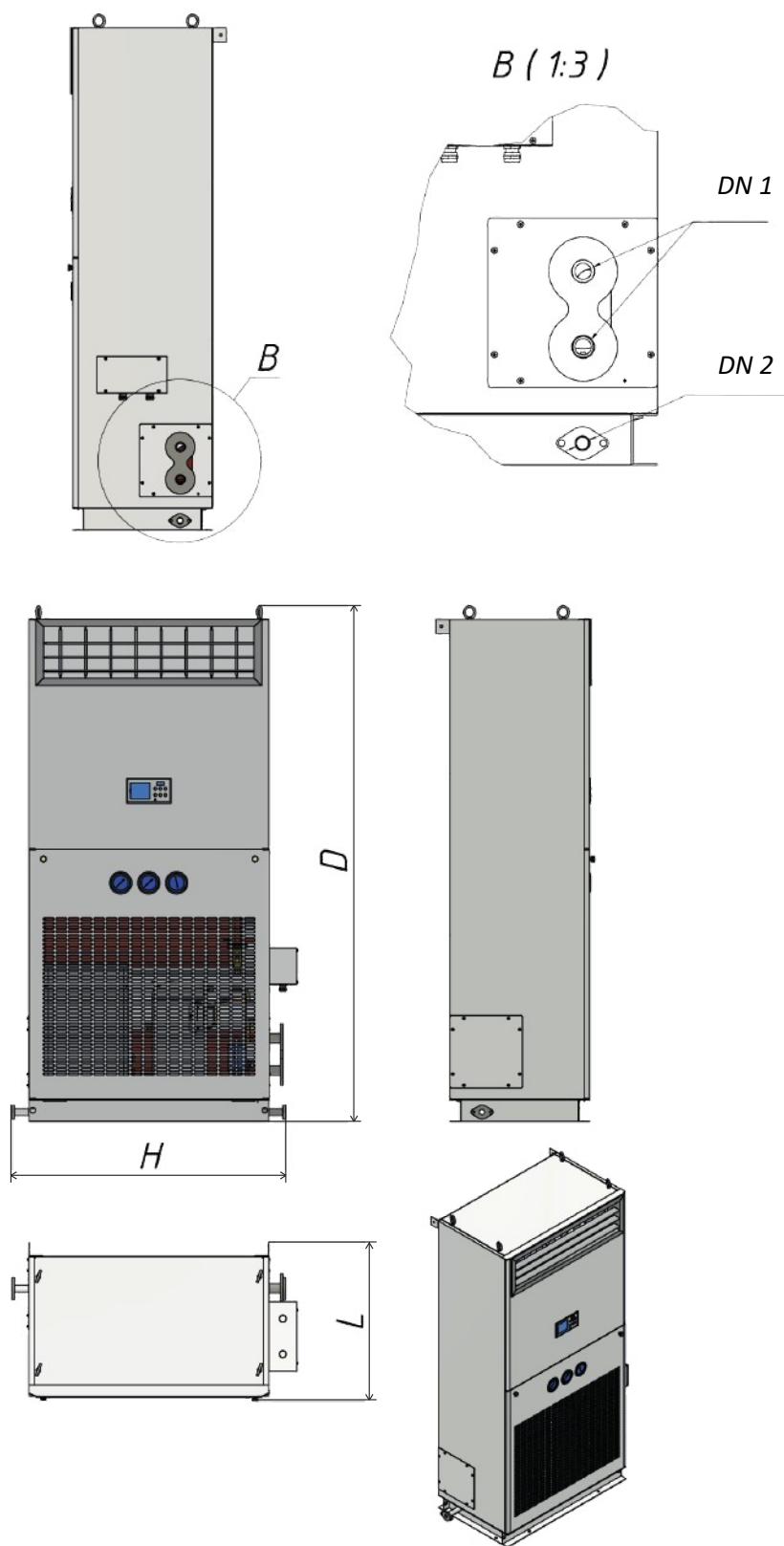
Note

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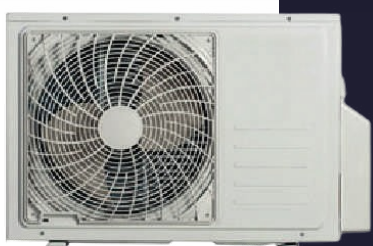
1. Temperature = 30°C ± 2°C;
2. Relative humidity = 60% ± 3%;
3. Atmospheric pressure = 101 kPa (760 mm Hg);
4. Cooling water temperature = 32°C ± 2°C.

OVERALL DIMENSIONS

OF THE SELF-CONTAINED CABINET AIR CONDITIONER



MARINE SELF-CONTAINED AIR CONDITIONERS



ThermoMarin marine wall-mounted air conditioners are designed for cooling or heating the air inside rooms (wheelhouses, cabins, special-purpose spaces)

We are ready to offer a fairly wide line of 6 air conditioners with cooling capacity from 2 to 7 kW

To extend the unit's service life and to maintain the temperature more precisely, the unit can be manufactured with variable cooling capacity.

AUTOMATION

- ▶ Operation control in cooling and heating modes
- ▶ 5-speed indoor unit fan
- ▶ Refrigerant leak indication
- ▶ Auto-restart, self-diagnostics
- ▶ Wireless remote control
- ▶ A condensing pressure regulator (optional)
- ▶ Drain pump (optional)
- ▶ Enhanced IP protection class

ADVANTAGES

- **High-efficiency air-cooled condenser with fins**
covered with a special blue-fin anti-corrosion coating
- **A condensing pressure regulator (optional)**
increases the operating efficiency of the unit at low temperatures
- **Drain pan**
made of ABS plastic which is not subject to corrosion
- **Two-sided drain connection (left or right)**
- **High-efficiency twin-rotary compressors are used,**
from world-class manufacturers such as GMCC, Hitachi, Toshiba.
- **Low indoor unit noise level**
Only 24 dB(A) at minimum speed

STANDARD DELIVERY SET

- | | |
|----------------------------------|--|
| 1. Outdoor unit | 4. Surge protection box (optional) |
| 2. Indoor unit | 5. Mounting bracket for the indoor unit |
| 3. Wireless remote control panel | 6. Mating nuts for refrigerant piping installation |

MARINE

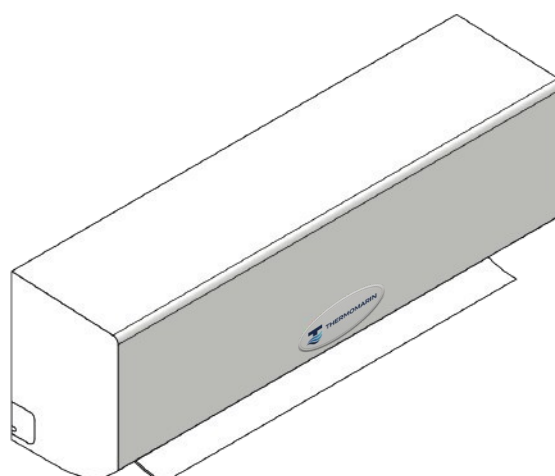
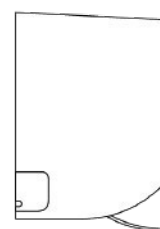
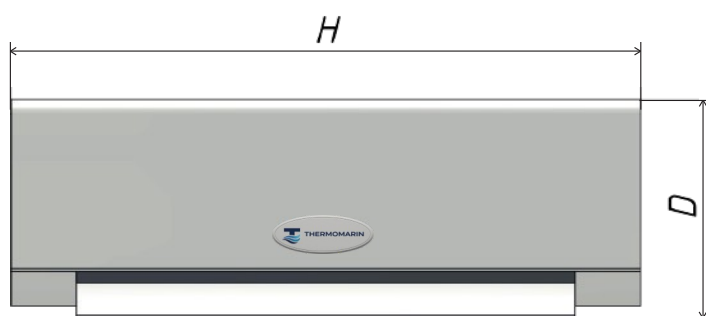
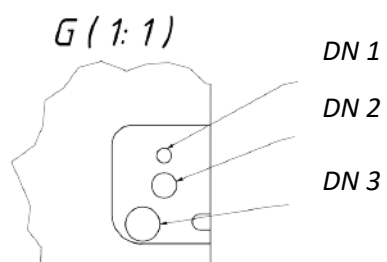
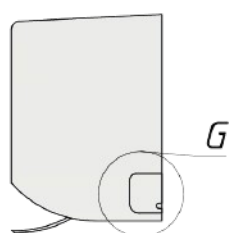
SELF-CONTAINED AIR CONDITIONERS

SKA-V-I MODELS 7 - 24

Model			SKA-V-7-I	SKA-V-9-I	SKA-V-11-I	SKA-V-13-I	SKA-V-18-I	SKA-V-24-I
cooling	Capacity	kW	2,1	2,6	3,2	3,5	5,5	6,8
	Power consumption	kW	0,7	0,8	1,0	1,1	1,7	2,2
	Current consumption	A	3,0	4,0	5,0	5,0	8,0	10,0
	Guaranteed outdoor temperature range	°C	0 ... +43					
heating	Capacity	kW	2,2	2,6	3,2	3,8	5,8	6,8
	Power consumption	kW	0,6	0,7	0,9	1,1	1,6	1,9
	Current consumption	A	3,0	3,0	4,0	5,0	7,0	9,0
	Guaranteed outdoor temperature range	°C	-15 ... +24					
Noise level	Indoor	dB(A)	<41,0	<41,0	<42,0	<39,0	<46,0	<44,0
	Outdoor	dB(A)	<49,0	<49,0	<49,0	<50,0	<53,0	<53,0
Maximum power consumption		kW	1,0	1,5	1,6	1,6	2,4	2,9
Air flow	Min.	m³/h	369	291	291	291	485	582
	Max.	m³/h	582	582	582	631	1 067	1 213
Power supply			220 - 240V / 1ph / 50Hz					
Power supply connection			indoor unit					
Refrigerant used			R32					
Factory refrigerant charge		g	380,0	450,0	520,0	570,0	1 050,0	1 120,0
Drain pipe diameter		mm	18,0					
Liquid pipe diameter		mm	6,35					
Gas pipe diameter		mm	9,53	9,53	9,53	9,53	12,7	15,88
Interconnecting cable		mm	4x1,5	4x1,5	4x1,5	4x1,5	4x2,5	4x2,5
Power cable		mm	3x1,5	3x1,5	3x1,5	3x1,5	3x2,5	3x2,5
Circuit breaker		A	10,0	10,0	10,0	10,0	16,0	16,0
Overall dimensions of indoor unit	Width	mm	745	745	745	745	915	1 085
	Height	mm	270	270	270	270	315	315
	Depth	mm	214	214	214	214	236	236
Overall dimensions of outdoor unit	Width	mm	660	660	660	660	780	860
	Height	mm	482	482	482	486	540	650
	Depth	mm	240	240	240	240	260	310
Weight	Indoor	kg	7,0	8,0	8,0	9,0	14,8	15,0
	Outdoor	kg	21,0	21,0	23,0	23,0	34,2	40,0
Maximum piping length		m	20					
Maximum height difference between the indoor and outdoor units		m	8	8	8	8	10	10

OVERALL DIMENSIONS

OF THE MARINE SELF-CONTAINED AIR CONDITIONER



MARINE

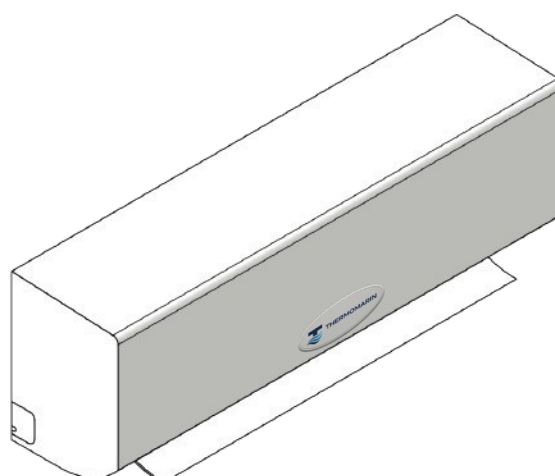
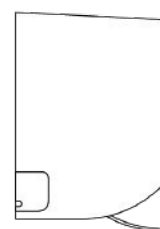
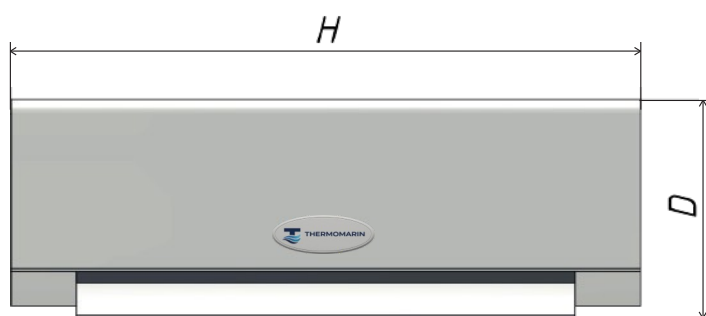
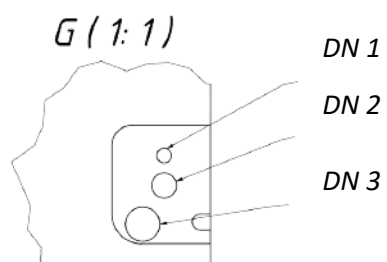
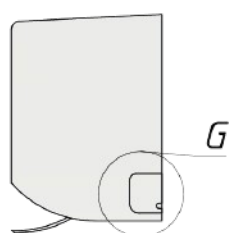
SELF-CONTAINED AIR CONDITIONERS

SKA-V MODELS 7 - 24

Model			SKA-V-7	SKA-V-9	SKA-V-12	SKA-V-18	SKA-V-24
cooling	Capacity	kW	2,0	2,4	3,1	5,1	6,6
	Power consumption	kW	0,7	0,8	1,0	1,7	2,1
	Current consumption	A	3,0	3,0	4,0	7,0	9,0
	Guaranteed outdoor temperature range	°C	+21 ... +43				
heating	Capacity	kW	2,1	2,5	3,1	5,2	6,9
	Power consumption	kW	0,6	0,7	0,9	1,5	2,0
	Current consumption	A	3,0	3,0	4,0	7,0	9,0
	Guaranteed outdoor temperature range	°C	-10 ... +24				
Noise level	Indoor	dB(A)	<34,0	<34,0	<38,0	<46,0	<46,0
	Outdoor	dB(A)	<52,0	<52,0	<52,0	<56,0	<58,0
Starting current		A	13,0	15,0	19,0	42,0	60,0
Maximum power consumption		kW	1,0	1,5	1,4	2,3	3,2
Air flow	Min.	m³/h	369	291	340	582	485
	Max.	m³/h	582	582	582	1 067	1 067
Power supply			220 - 240V / 1ph / 50Hz				
Power supply connection			indoor unit				
Refrigerant used			R410A				
Factory refrigerant charge		g	480,0	540,0	710,0	1 040,0	1 170,0
Drain pipe diameter		mm	18,0				
Liquid pipe diameter		mm	6,35				
Gas pipe diameter		mm	9,53	9,53	12,7	12,7	15,88
Interconnecting cable		mm	5x1,5	5x1,5	5x2,5	5x2,5	5x2,5
Power cable		mm	3x1,5	3x1,5	3x2,5	3x2,5	3x2,5
Circuit breaker		A	10,0	10,0	10,0	16,0	16,0
Overall dimensions of indoor unit	Width	mm	757	757	800	977	977
	Height	mm	250	250	270	315	315
	Depth	mm	205	205	214	236	236
Overall dimensions of outdoor unit	Width	mm	660	660	715	780	860
	Height	mm	482	482	482	540	650
	Depth	mm	240	240	240	260	310
Weight	Indoor	kg	7,0	7,0	8,0	13,0	13,0
	Outdoor	kg	22,0	24,0	27,0	39,0	46,0
Maximum piping length		m	15,0	15,0	15,0	20,0	20,0
Maximum height difference between the indoor and outdoor units		m	8	8	5	10	10

OVERALL DIMENSIONS

OF THE MARINE SELF-CONTAINED AIR CONDITIONER



MARINE AIR CONDITIONERS SELF-CONTAINED MODERNIZED



CASSETTE VERSION

ThermoMarin marine cassette air conditioners are mounted in the deckhead and are perfect for large rooms.

This type of air conditioner cools the space evenly thanks to its high capacity and louvers providing 4-way air distribution.

We are ready to offer a wide line of 5 air conditioners with cooling capacities from 5 to 17 kW.

To extend the unit's service life and to maintain the temperature more precisely, an inverter compressor can be used.

AUTOMATION

- ▶ Operation control in cooling and heating modes
- ▶ 5-speed indoor unit fan
- ▶ Refrigerant leak indication
- ▶ Auto-restart, self-diagnostics
- ▶ Wireless remote control
- ▶ A condensing pressure regulator (optional)
- ▶ Drain pump (optional)
- ▶ Enhanced IP protection class

ADVANTAGES

- **Set temperature maintained with accuracy up to 1°C**
- **A condensing pressure regulator (optional)**
increases the operating efficiency of the air conditioner at low temperatures
- **Unit casing made of galvanized steel**
- **Maximum piping length up to 50 meters**
- **Drain pump lift height up to 1.2 m**
- **Fresh air intake option**
- **Two-sided drain connection (left and right)**
- **High-efficiency twin-rotary compressors are used,**
from world-class manufacturers such as GMCC, Hitachi, Toshiba

STANDARD DELIVERY SET

- | | |
|--|------------------------------------|
| 1. Outdoor unit | 5. Built-in drain pump |
| 2. Indoor unit | 6. Air filter |
| 3. Wireless remote control panel | 7. Surge protection box (optional) |
| 4. Mating nuts for refrigerant piping installation | 8. Wired control panel (optional) |



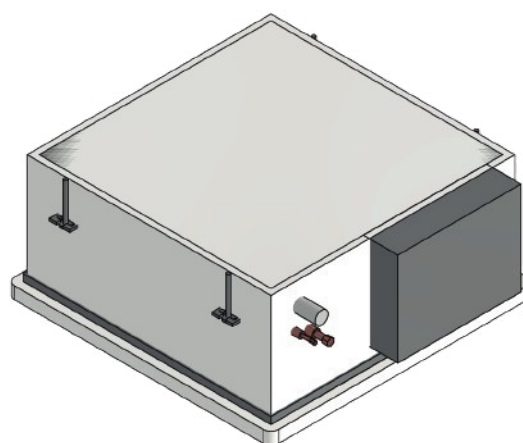
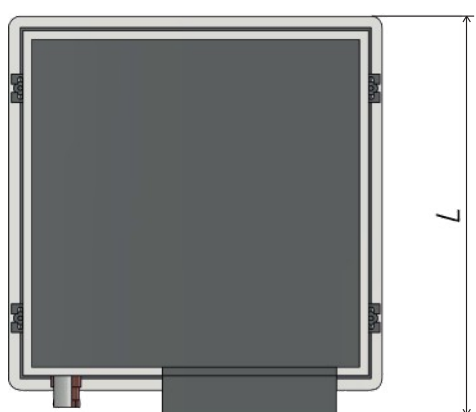
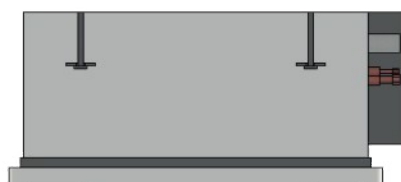
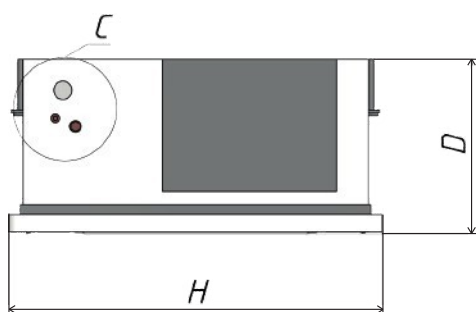
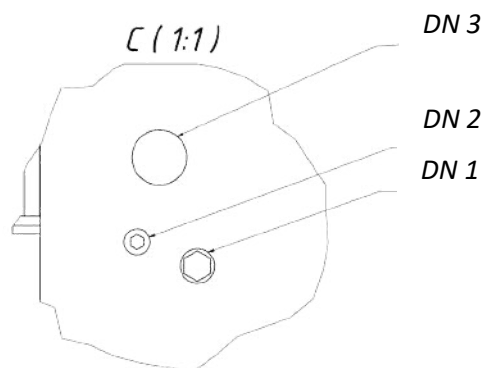
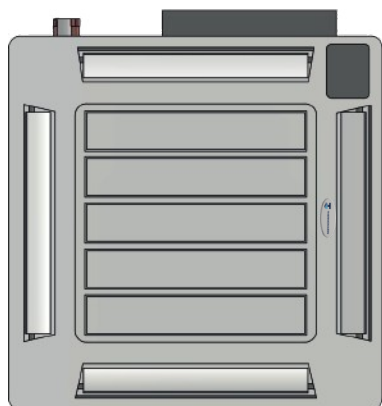
**MARINE AIR CONDITIONERS
SELF-CONTAINED MODIFIED**

SKAM-IV-I MODELS 18 - 60

Model			SKAM-IV-18-I	SKAM-IV-24-I	SKAM-IV-36-I	SKAM-IV-48-I	SKAM-IV-60-I	
cooling	Capacity		kW	5,0	7,0	9,5	12,2	16,5
	Power consumption		kW	1,7	2,2	3,5	3,7	5,1
	Current consumption		A	8,0	10,0	15,0	7,0	9,0
	Outdoor temperature temperature range		°C	-15 ... +48				
heating	Capacity		kW	6,0	8,2	10,9	14,6	19,4
	Power consumption		kW	1,8	2,4	3,1	4,0	5,5
	Current consumption		A	8,0	11,0	13,0	7,0	10,0
	Outdoor temperature temperature range		°C	-10 ... +24				
Noise level	Indoor	dB(A)	<48,0	<44,0	<55,0	<52,0	<52,0	
	Outdoor	dB(A)	<52,0	<58,0	<62,0	<57,0	<62,0	
Static pressure		Pa	10,0	50,0	50,0	80,0	80,0	
Maximum power consumption		kW	2,1	4,3	5,7	6,1	6,5	
Air flow	Min.	m³/h	611	766	1 174	1 455	1 455	
	Max.	m³/h	825	1 067	1 746	1 940	1 940	
Unit power supply		indoor	220V / 1ph / 50Hz			220V / 1ph / 50Hz		
		outdoor				380V / 3ph /50Hz		
Power supply connection		outdoor unit						
Factory refrigerant R410A charge		g	1 240,0	1 700,0	2 100,0	3 000,0	3 500,0	
Drain pipe diameter		mm	32,0					
Liquid pipe diameter		mm	6,35	9,53	9,53	9,53	9,53	
Gas pipe diameter		mm	12,7	15,88	15,88	19,05	19,05	
Overall dimensions of indoor unit	Width	mm	650	840	840	840	840	
	Height	mm	270	248	248	298	298	
	Depth	mm	570	840	840	840	840	
Overall dimensions of outdoor unit	Width	mm	810	860	950	950	950	
	Height	mm	584	670	840	1 386	1 386	
	Depth	mm	281	310	340	340	340	
Overall dimensions of panel	Width	mm	650	950	950	950	950	
	Height	mm	30	37	37	37	37	
	Depth	mm	650	950	950	950	950	
Weight	Indoor	kg	22,0	37,5	31,0	30,0	30,0	
	Outdoor	kg	37,0	57,8	72,0	10,4	111,0	
	Panel	kg	2,0	9,6	7,0	7,0	7,0	
Maximum piping length		m	30,0	30,0	30,0	50,0	50,0	
Maximum height difference between the indoor and outdoor units		m	15,0	20,0	20,0	30,0	30,0	

OVERALL DIMENSIONS

OF THE MARINE SELF-CONTAINED MODIFIED AIR CONDITIONER





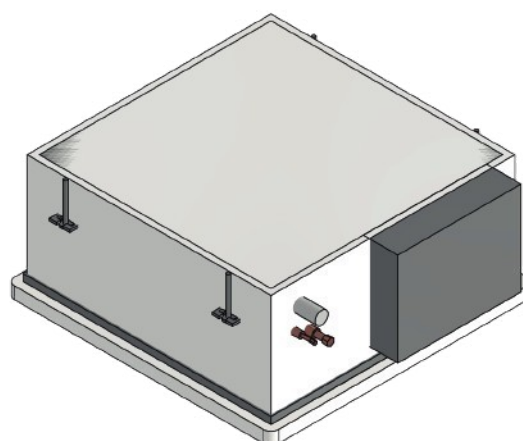
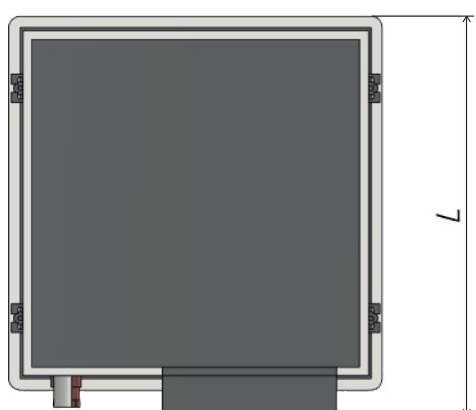
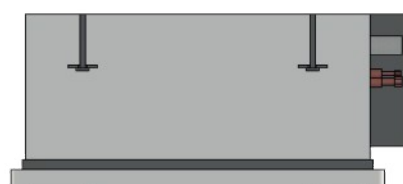
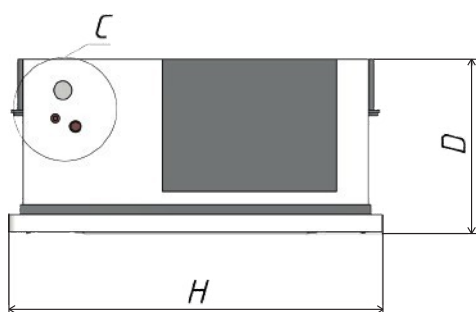
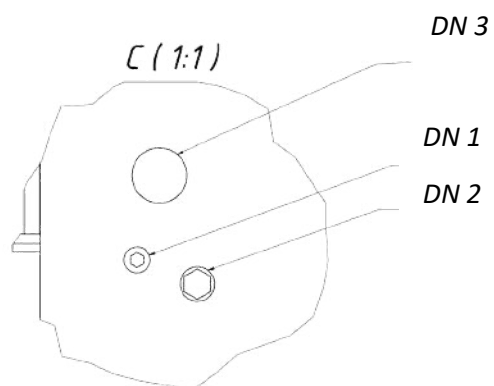
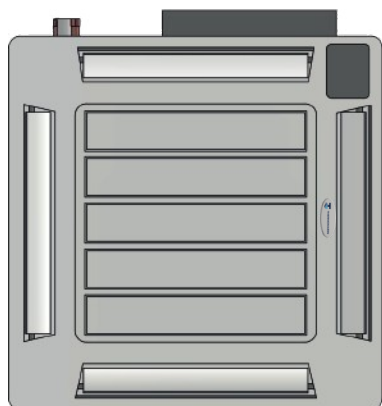
**MARINE AIR CONDITIONERS
SELF-CONTAINED MODIFIED**

SKAM-IV MODELS 24 - 60

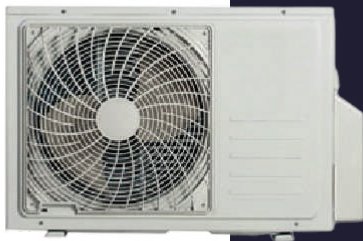
Model			SKAM-IV-24	SKAM-IV-36	SKAM-IV-48	SKAM-IV-60	
cooling	Capacity		kW	6,8	10,2	13,6	15,5
	Power consumption		kW	2,3	3,5	4,7	5,7
	Current consumption		A	10,0	7,0	9,0	10,0
	Outdoor temperature temperature range		°C	-15 ... +43			
heating	Capacity		kW	7,8	10,9	14,6	17,0
	Power consumption		kW	2,2	3,1	4,5	5,8
	Current consumption		A	10,0	7,0	9,0	10,0
	Outdoor temperature temperature range		°C	-10 ... +24			
Noise level	Indoor	dB(A)	<43,0	<41,0	<47,0	<47,0	
	Outdoor	dB(A)	<58,0	<64,0	<57,0	<60,0	
Static pressure		Pa	50,0	50,0	80,0	80,0	
Maximum power consumption		kW	3,3	4,4	6,7	8,5	
Air flow	Min.	m³/h	873	1 455	1 552	1 552	
	Max.	m³/h	1 213	1 746	1 940	1 940	
Unit power supply		indoor	220V / 1ph / 50Hz		220V / 1ph / 50Hz		
		outdoor			380V / 3ph /50Hz		
Power supply connection			outdoor unit				
Factory refrigerant R410A charge		g	1 580,0	2 600,0	2 400,0	3 100,0	
Drain pipe diameter		mm	32,0				
Liquid pipe diameter		mm	9,53				
Gas pipe diameter		mm	15,88	19,05	19,05	19,05	
Overall dimensions of indoor unit	Width	mm	900	1 386	1 386	1 386	
	Height	mm	270	350	350	350	
	Depth	mm	720	800	800	800	
Overall dimensions of outdoor unit	Width	mm	860	885	950	950	
	Height	mm	665	795	1 050	1 386	
	Depth	mm	310	366	340	340	
Weight	Indoor	kg	31,0	56,0	56,0	56,0	
	Outdoor	kg	53,0	69,0	99,0	109,0	
Maximum piping length		m	35,0	40,0	60,0	60,0	
Maximum height difference between the indoor and outdoor units		m	15,0	20,0	30,0	30,0	

OVERALL DIMENSIONS

OF THE MARINE SELF-CONTAINED MODIFIED AIR CONDITIONER



MARINE AIR CONDITIONERS SELF-CONTAINED MODERNIZED



CEILING-MOUNTED VERSION

ThermoMarin marine ducted air conditioners are designed for cooling or heating the air inside controlled spaces (wheelhouse, galley, cabins and mess rooms, special-purpose spaces)

The low casing height of ThermoMarin units (from 190 mm) expands their range of application, as it does not require significantly lowering the deckhead height during installation

The specially designed construction allows air intake from two positions - from below or from the rear. This gives greater flexibility when choosing the installation location.

To extend the unit's service life and to maintain the temperature more precisely, an inverter compressor can be used.

AUTOMATION

- ▶ Operation control in cooling and heating modes
- ▶ Auto-restart, self-diagnostics
- ▶ A condensing pressure regulator (optional)
- ▶ Enhanced IP protection class
- ▶ Wired remote control panel
- ▶ Cooling/heating operation down to -15°C/-10°C

ADVANTAGES

- **Unit casing made of galvanized steel**
- **Ultra-slim unit casing (from 190 mm)**
- **Built-in drain pan is not subject to corrosion**
- **Air intake possible from below and from the side**
- **Maximum piping length up to 50 meters**
- **Fresh air intake option**
- **Set temperature maintained with accuracy up to 1°C**
- **A condensing pressure regulator (optional)**
increases the operating efficiency of the unit
at low temperatures.
- **High-efficiency twin-rotary compressors are used,**
from world-class manufacturers such as GMCC, Hitachi, Toshiba

STANDARD DELIVERY SET

1. **Outdoor unit**
2. **Indoor unit**
3. **Wired remote**
control panel
4. **Mating nuts for refrigerant**
piping installation

5. **Drain pump (optional)**
6. **Air filter (optional)**
7. **Surge protection box (optional)**



MARINE AIR CONDITIONERS SELF-CONTAINED MODIFIED

SKAM-II-I MODELS 18 - 60

Model			SKAM-II-18-I	SKAM-II-24-I	SKAM-II-36-I	SKAM-II-48-I	SKAM-II-60-I	
cooling	Capacity		kW	5,0	7,0	9,5	12,2	16,5
	Power consumption		kW	1,7	2,2	3,5	3,9	5,3
	Current consumption		A	8,0	10,0	15,0	8,0	9,0
	Guaranteed outdoor temperature range		°C	-15 ... +48				
heating	Capacity		kW	5,8	8,2	10,7	14,6	19,9
	Power consumption		kW	1,8	2,4	3,1	4,2	5,7
	Current consumption		A	8,0	11,0	13,0	8,0	10,0
	Guaranteed outdoor temperature range		°C	-10 ... +24				
Noise level	Indoor	dB(A)	<37,0	<41,0	<41,0	<55,0	<54,0	
	Outdoor	dB(A)	<52,0	<58,0	<62,0	<62,0	<62,0	
Static pressure		Pa	10,0	50,0	50,0	80,0	80,0	
Maximum power consumption		kW	2,1	4,3	5,7	6,4	7,7	
Air flow	Min.	m³/h	698	776	1 455	1 455	1 455	
	Max.	m³/h	873	1 067	1 746	1 940	1 940	
Unit power supply		indoor	220 - 240V / 1ph / 50Hz			220 - 240V / 1ph / 50Hz		
		outdoor				380V / 3ph / 50Hz		
Power supply connection			outdoor unit					
Refrigerant used			R410A					
Factory refrigerant charge		g	1 240,0	1 700,0	2 100,0	3 000,0	3 500,0	
Drain pipe diameter		mm	32,0					
Liquid pipe diameter		mm	6,35	9,53	9,53	9,53	9,53	
Gas pipe diameter		mm	12,7	15,88	15,88	19,05	19,05	
Interconnecting cable		mm	4x0,75	4x0,75	4x0,75	4x0,75	4x0,75	
Power cable		mm	3x2,5	3x2,5	3x2,5	5x2,5	5x4,0	
Circuit breaker		A	16,0	20,0	20,0	20,0	20,0	
Overall dimensions of indoor unit	Width	mm	1 170	900	1 300	1 300	1 300	
	Height	mm	190	270	350	350	350	
	Depth	mm	447	720	800	800	800	
Overall dimensions of outdoor unit	Width	mm	810	860	950	950	950	
	Height	mm	584	670	840	1 386	1 386	
	Depth	mm	281	310	340	340	340	
Weight	Indoor	kg	25,0	33,0	56,0	52,0	52,0	
	Outdoor	kg	37,0	53,0	72,0	104,0	111,0	
Maximum piping length		m	30,0	30,0	30,0	50,0	50,0	
Maximum height difference between the indoor and outdoor units		m	15,0	20,0	20,0	30,0	30,0	

OF THE MARINE SELF-CONTAINED MODIFIED AIR CONDITIONER





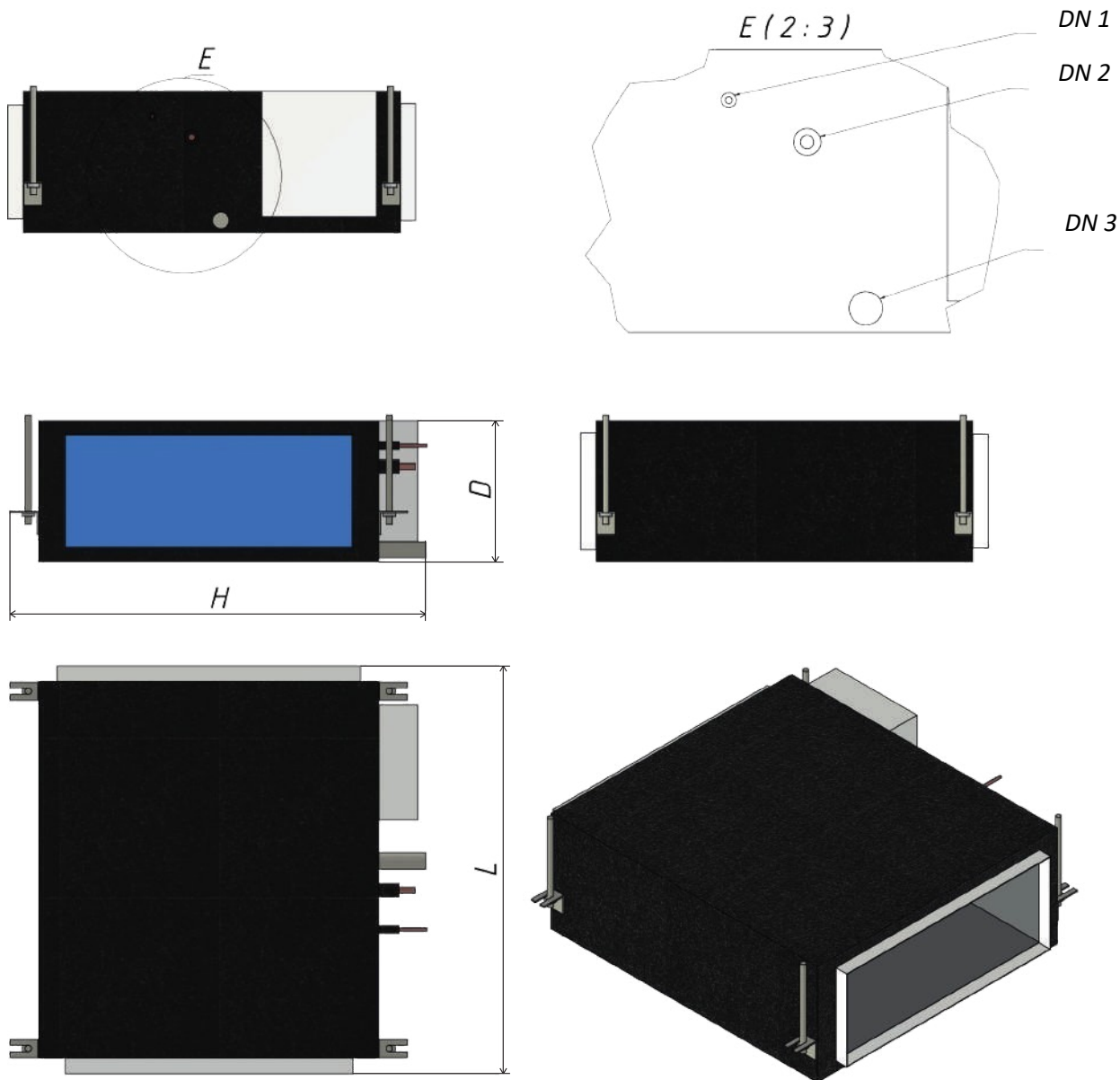
**MARINE AIR CONDITIONERS
SELF-CONTAINED MODIFIED**

SKAM-II MODELS 18 - 60

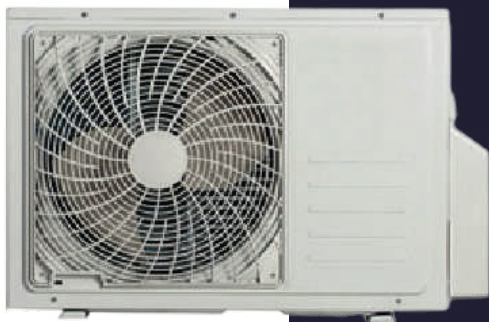
Model			SKAM-II-18	SKAM-II-24	SKAM-II-36	SKAM-II-48	SKAM-II-60	
cooling	Capacity		kW	4,9	2,4	10,2	13,6	15,5
	Power consumption		kW	1,7	2,3	3,5	4,7	5,7
	Current consumption		A	8,0	10,0	7,0	9,0	10,0
	Guaranteed outdoor temperature range		°C	-15 ... +43				
heating	Capacity		kW	5,5	2,5	10,9	14,6	17,0
	Power consumption		kW	1,7	2,2	3,1	4,5	5,8
	Current consumption		A	7,0	10,0	7,0	9,0	10,0
	Guaranteed outdoor temperature range		°C	-10 ... +24				
Noise level	Indoor	dB(A)	<39,0	<43,0	<41,0	<47,0	<47,0	
	Outdoor	dB(A)	<56,0	<58,0	<64,0	<57,0	<60,0	
Starting current		A	47,0	63,0	39,0	69,0	67,0	
Static pressure		Pa	10,0	50,0	50,0	80,0	80,0	
Maximum power consumption		kW	2,5	3,3	4,4	6,7	8,5	
Air flow	Min.	m³/h	611	873	1 455	1 552	1 552	
	Max.	m³/h	728	1 213	1 746	1 940	1 940	
Unit power supply		indoor	220 - 240V / 1ph / 50Hz		220 - 240V / 1ph / 50Hz			
		outdoor			380V / 3ph / 50Hz			
Power supply connection			indoor unit		outdoor unit			
Refrigerant used			R410A					
Factory refrigerant charge		g	1 300,0	1 600,0	2 600,0	2 400,0	3 100,0	
Drain pipe diameter		mm	32,0					
Liquid pipe diameter		mm	6,35	9,53	9,53	9,53	9,53	
Gas pipe diameter		mm	12,7	15,88	19,05	19,05	19,05	
Interconnecting cable		mm	5x2,5	4x1,5	4x1,5	4x1,5	4x1,5	
Power cable		mm	3x2,5	3x2,5	5x2,5	5x2,5	5x4,0	
Circuit breaker		A	16,0	20,0	16,0	32,0	32,0	
Overall dimensions of indoor unit	Width	mm	900	900	1 386	1 386	1 386	
	Height	mm	190	270	350	350	350	
	Depth	mm	447	720	800	800	800	
Overall dimensions of outdoor unit	Width	mm	810	860	885	950	950	
	Height	mm	585	665	795	1 050	1 386	
	Depth	mm	280	310	366	340	340	
Weight	Indoor	kg	20,0	31,0	56,0	56,0	56,0	
	Outdoor	kg	43,0	53,0	69,0	99,0	109,0	
Maximum piping length		m	25,0	35,0	40,0	60,0	60,0	
Maximum height difference between the indoor and outdoor units		m	15,0	15,0	20,0	30,0	30,0	

OVERALL DIMENSIONS

OF THE MARINE SELF-CONTAINED MODIFIED AIR CONDITIONER



MARINE MULTI-ZONE AIR CONDITIONERS



Using the ThermoMarin marine multi-zone system significantly improves the vessel's appearance, since only one outdoor unit is installed instead of four of them.

The total cooling capacity of marine multi-zone systems ranges from 4 to 16 kW.

The number of indoor units varies from 2 to 4.

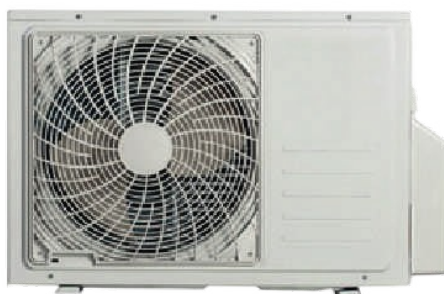
An important feature is that you can freely configure the air conditioning system by combining units of different types (ducted, cassette and wall-mounted) into a single network.

AUTOMATION

- ▶ Operation control in cooling and heating modes
- ▶ 5 indoor unit fan speeds
- ▶ Auto-restart, self-diagnostics
- ▶ Enhanced IP protection class
- ▶ Wired remote control panel

ADVANTAGES

- **Maximum total piping length up to 80 meters**
- **High-efficiency twin-rotary compressors are used,**
from world-class manufacturers such as GMCC, Hitachi, Toshiba



STANDARD DELIVERY SET

- | | |
|---|------------------------------------|
| 1. Outdoor unit | 5. Drain pump (optional) |
| 2. Indoor unit | 6. Air filter (optional) |
| 3. Control panel | 7. Surge protection box (optional) |
| 4. Mating nuts for refrigerant
piping installation | |



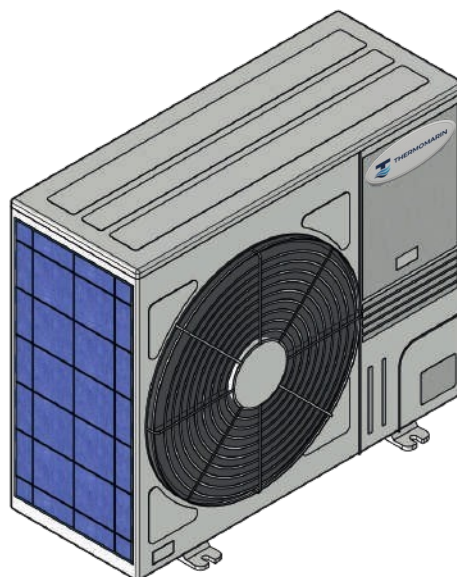
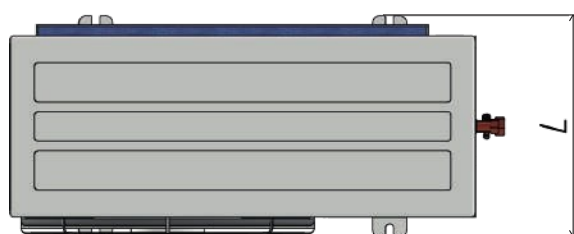
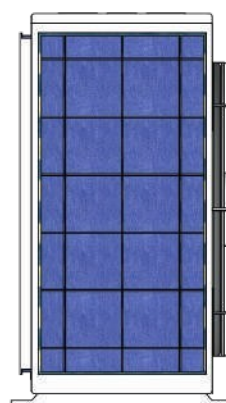
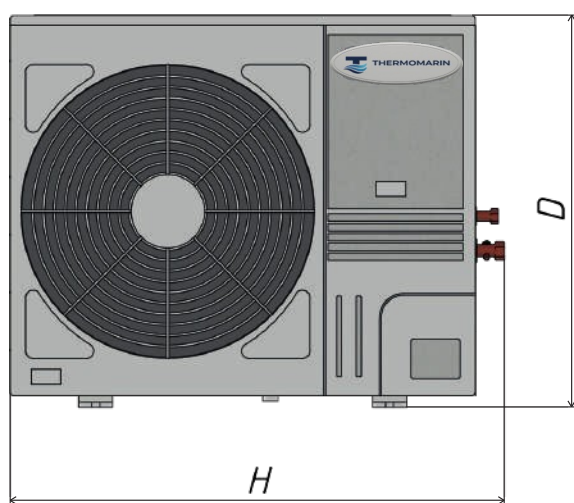
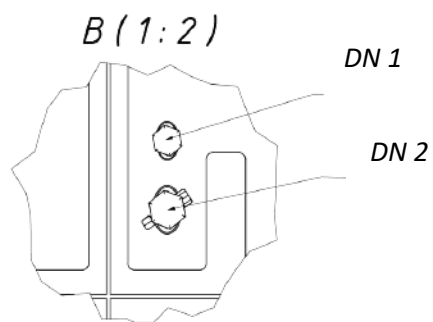
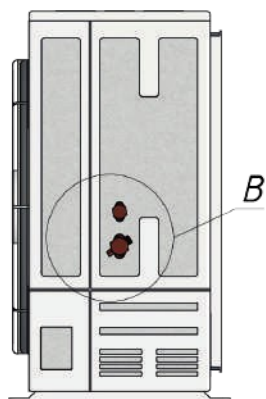
MARINE MULTI-ZONE AIR CONDITIONERS

MZS-I MODELS 14 - 60

Model			MZS2-14-I	MZS2-18-I	MZS3-24-I	MZS4-28-I	MZS4-36-I	MZS5-42-I	MZS5-60-I	
cooling	Capacity		kW	4,0	5,0	6,8	8,0	9,7	12,1	15,5
	Power consumption		kW	1,2	1,5	1,8	2,2	3,1	3,9	5,4
	Current consumption		A	9,0	9,0	13,0	13,0	17,0	24,0	13,0
	Outdoor temperature range		°C	-15 ... +48	-15 ... +48	-15 ... +48	-15 ... +48	-15 ... +48	+7 ... +43	+7 ... +45
heating	Capacity		kW	4,4	5,8	8,1	8,7	10,7	14,1	17,5
	Power consumption		kW	1,1	1,5	2,2	2,2	2,8	4,0	5,2
	Current consumption		A	8,0	10,0	13,0	12,0	16,0	23,0	13,0
	Outdoor temperature range		°C	-15 ... +24	-15 ... +24	-15 ... +24	-10 ... +24	-10 ... +24	-10 ... +24	-10 ... +24
Noise level		dB(A)	<49,0	<49,0	<55,0	<55,0	<55,0	<57,0	<59,0	
Power supply		V/phase/Hz	220/1/50							380/3/50
Power supply connection		outdoor unit								
Factory refrigerant charge		g	1 200,0	1 320,0	2 200,0	2 600,0	2 600,0	2 600,0	3 350,0	
Liquid pipe diameter		mm	6,35	6,35	6,35	6,35	6,35	9,53	9,53	
Gas pipe diameter		mm	9,53	9,53	9,53	9,53	9,53	15,88	19,05	
Overall dimensions unit	Width	mm	730	810	950	950	950	950	950	
	Height	mm	536	580	840	840	840	1 050	1 386	
	Depth	mm	260	280	340	340	340	340	340	
Weight		kg	34,0	38,0	68,0	69,0	69,0	84,0	106,0	
Maximum piping length		m	30,0	30,0	60,0	60,0	60,0	100,0	100,0	
Maximum height difference between the indoor and outdoor units		m	15,0	15,0	15,0	15,0	15,0	40,0	70,0	

OVERALL DIMENSIONS

OF THE MARINE MULTI-ZONE AIR CONDITIONER

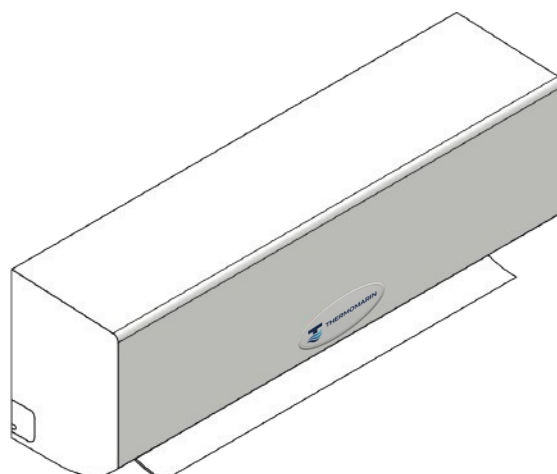
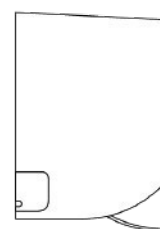
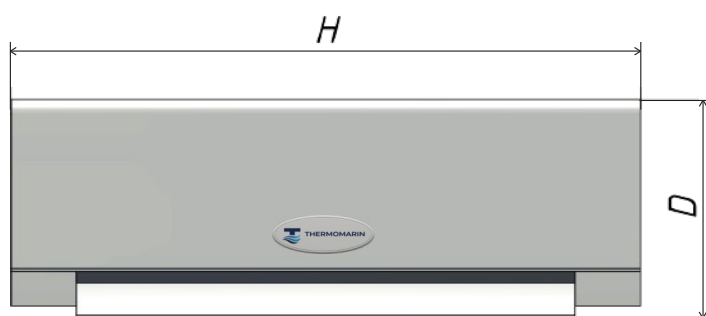
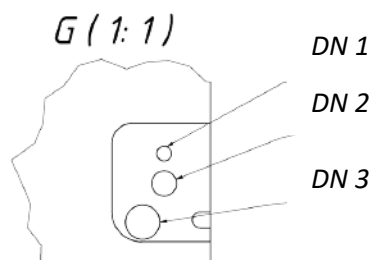
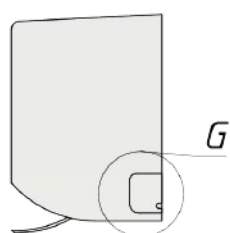


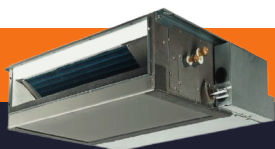
MZS-V-I MODELS 7 - 18

Model			MZS-V-7-I	MZS-V-9-I	MZS-V-12-I	MZS-V-18-I
cooling	Capacity	kW	2,0	2,5	3,4	4,9
	Power consumption	kW	0,1			
	Current consumption	A	1,0			
heating	Capacity	kW	2,5	2,7	3,8	5,4
	Power consumption	kW	0,1			
	Current consumption	A	1,0			
Noise level		dB(A)	<38,0	<39,0	<40,0	<47,0
Air flow (max.)		m³/h	485,0	485,0	582,0	970,0
Power supply		220V / 1ph /50Hz				
Refrigerant used		R410A				
Liquid pipe diameter		mm	6,35			
Gas pipe diameter		mm	9,53	9,53	9,53	12,7
Overall dimensions of indoor unit	Width	mm	815	815	815	915
	Height	mm	270	270	270	315
	Depth	mm	214	214	214	236
Weight		kg	9,0			

OVERALL DIMENSIONS

OF THE MARINE MULTI-ZONE AIR CONDITIONER





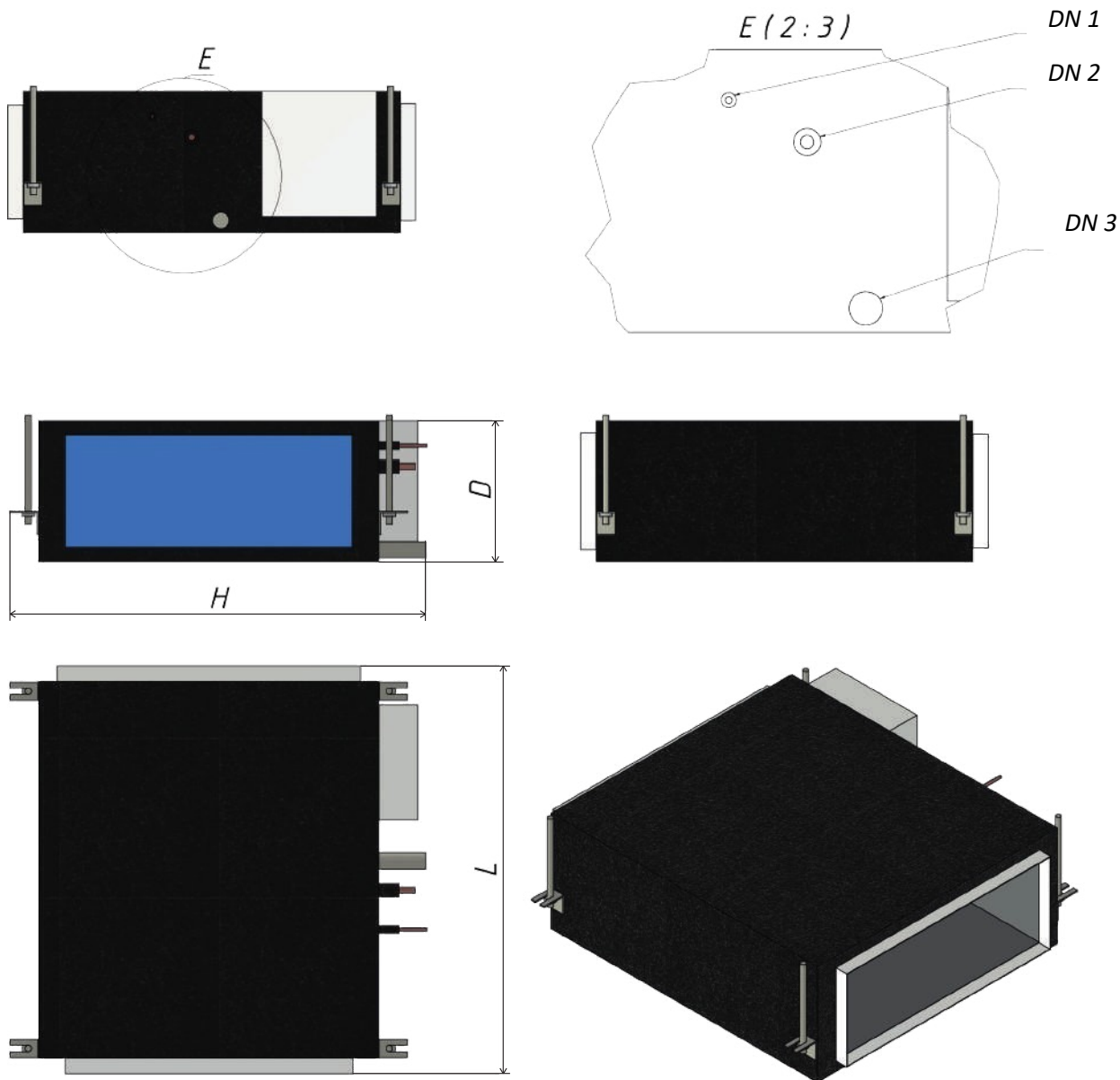
MARINE MULTI-ZONE AIR CONDITIONERS

MZS-II-I MODELS 9 - 18

Model			MZS-II-9-I	MZS-II-12-I	MZS-II-18-I
cooling	Capacity	kW	2,5	3,1	4,9
	Power consumption	kW	0,1		
	Current consumption	A	1,0		
heating	Capacity	kW	2,9	3,6	5,3
	Power consumption	kW	0,1		
	Current consumption	A	1,0		
Noise level		dB(A)	<36,0	<36,0	<40,0
Static pressure		Pa	30,0		
Air flow (max.)		m³/h	504,0	504,0	679,0
Power supply			220V / 1ph /50Hz		
Refrigerant used			R410A		
Liquid pipe diameter		mm	6,35		
Gas pipe diameter		mm	9,53	9,53	12,7
Overall dimensions of indoor unit	Width	mm	770		
	Height	mm	190		
	Depth	mm	600		
Weight		kg	21,0	21,0	22,0

OVERALL DIMENSIONS

OF THE MARINE MULTI-ZONE AIR CONDITIONER





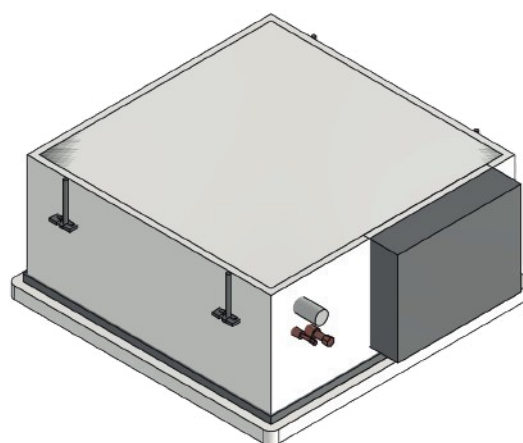
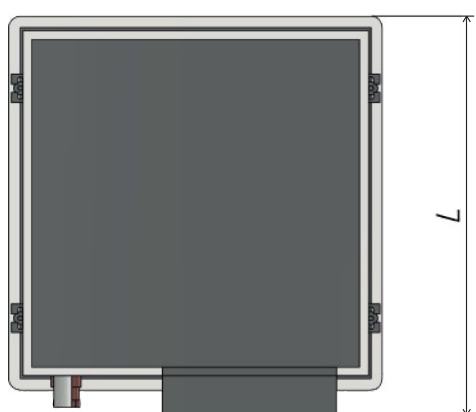
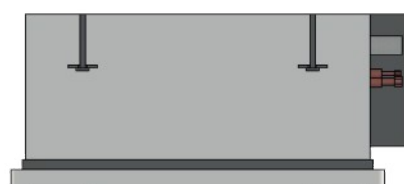
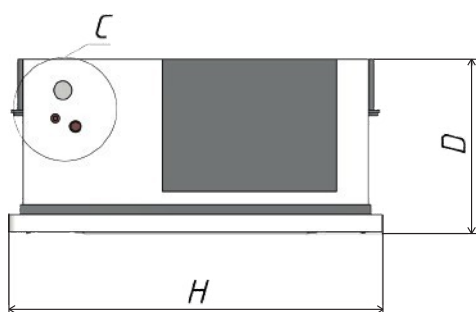
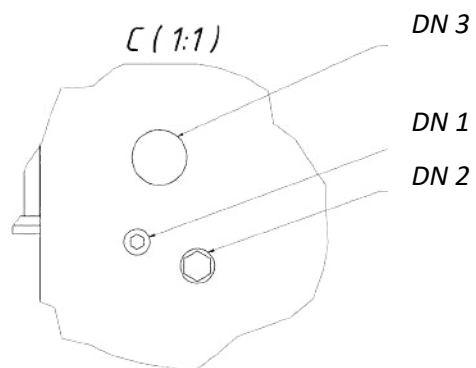
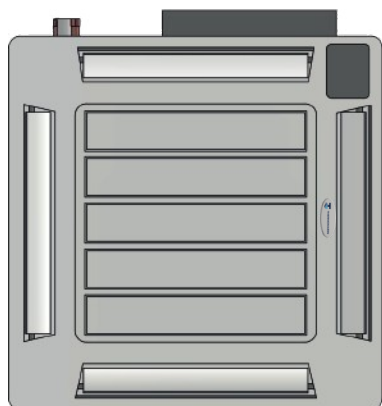
MARINE MULTI-ZONE AIR CONDITIONERS

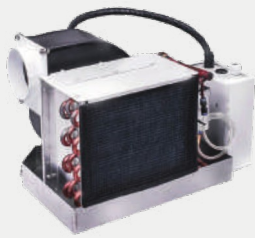
MZS-IV-I MODELS 12 - 18

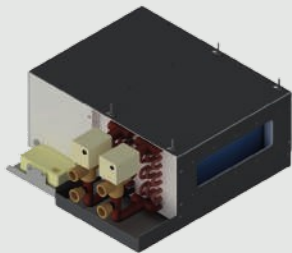
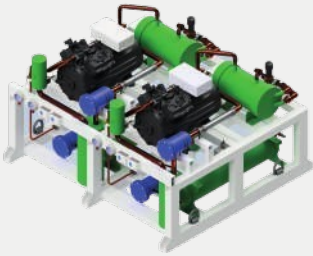
Model			MZS-IV-12-I	MZS-IV-18-I
cooling	Capacity	kW	3,4	4,9
	Power consumption	kW	0,1	
	Current consumption	A	1,0	
heating	Capacity	kW	3,9	5,3
	Power consumption	kW	0,1	
	Current consumption	A	1,0	
Noise level		dB(A)	<48,0	
Air flow (max.)		m³/h	776,0	
Power supply			220V / 1ph /50Hz	
Refrigerant used			R410A	
Liquid pipe diameter		mm	6,35	
Gas pipe diameter		mm	9,53	12,7
Overall dimensions unit	Width	mm	650	
	Height	mm	270	
	Depth	kg	570	
Overall dimensions of panel	Width	mm	650	
	Height	mm	30	
	Depth	kg	650	
Weight	Unit	kg	22,0	
	Panel	kg	2,4	
Built-in drain pump			yes	
Condensate lift height of the built-in drain pump		mm	1 200,0	

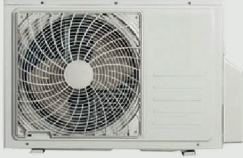
OVERALL DIMENSIONS

OF THE MARINE MULTI-ZONE AIR CONDITIONER



AVM	Article	Code
	AVM - 96	NF-00011477
	AVM - 72 -I	NF-00017532
	AVM - 72	NF-00011478
	AVM - 60 -I	NF-00017531
	AVM - 60	NF-00011479
	AVM - 48 -I	NF-00017530
	AVM - 48	NF-00011480
	AVM - 36 -I	NF-00017529
	AVM - 36	NF-00017580
	AVM - 300	NF-00017497
	AVM - 240	NF-00011474
	AVM - 180	NF-00011475
	AVM - 120	NF-00011476
KAM	Article	Code
	KAM - 48	NF-00011394
	KAM - 36	NF-00011395
	KAM - 24	NF-00011397
	KAM - 18	NF-00011398
	KAM - 12 - 24V	NF-00017943
	KAM - 12 - 12V	NF-00017942
	KAM - 12	NF-00011399
	KAM - 08 - 24V	NF-00017941
	KAM - 08	NF-00011400
	KAM - 06 - 12V	NF-00017940
	KAM - 06	NF-00011401
KNS - III	Article	Code
	KNS - III - 36	NF-00011459
	KNS - III - 24	NF-00011460
	KNS - III - 16	NF-00011461
	KNS - III - 12	NF-00011462
	KNS - III - 10	NF-00011463
	KNS - III - 07	NF-00011464
	KNS - III - 05	NF-00017579
KNS - I	Article	Code
	KNS - I - 42	NF-00011459
	KNS - I - 36	NF-00011460
	KNS - I - 24	NF-00011461
	KNS - I - 18	NF-00011462
	KNS - I - 12	NF-00011463
	KNS - I - 10	NF-00011464
	KNS - I - 06	NF-00011468
	KNS - I - 04	NF-00011469

KNS - II	Article	Code
	KNS - II - 42	NF-00017535
	KNS - II - 36	NF-00017534
	KNS - II - 24	NF-00016086
	KNS - II - 18	NF-00017576
	KNS - II - 16	NF-00015062
	KNS - II - 14	NF-00017575
	KNS - II - 12	NF-00011470
	KNS - II - 10	NF-00011471
	KNS - II - 06	NF-00011472
	KNS - II - 04	NF-00011473
2KNS - II	Article	Code
	2KNS - II - 42	NF-00017312
	2KNS - II - 36	NF-00017311
	2KNS - II - 24	NF-00017542
	2KNS - II - 18	NF-00017308
	2KNS - II - 16	NF-00017578
	2KNS - II - 14	NF-00013438
	2KNS - II - 12	NF-00013437
	2KNS - II - 10	NF-00013436
	2KNS - II - 06	NF-00017541
	2KNS - II - 04	NF-00013435
MXPKS	Article	Code
	3MXPKS - 40 (R134A, -13°C)	NF-00014940
	2MXPKS - 15 (R134A, -13°C)	NF-00014936
	2MXPKS - 20 (R134A, -13°C)	NF-00014937
	2MXPKS - 25 (R134A, -13°C)	NF-00014938
	2MXPKS - 8 (R134A, -13°C)	NF-00014935
	3MXPKS - 30 (R134A, -13°C)	NF-00014939
	2MXPKS - 15 (R404A, -18°C)	NF-00014942
	2MXPKS - 20 (R404A, -18°C)	NF-00014943
	2MXPKS - 25 (R404A, -18°C)	NF-00014944
	2MXPKS - 8 (R404A, -18°C)	NF-00014941
	3MXPKS - 30 (R404A, -18°C)	NF-00014945
	3MXPKS - 40 (R404A, -18°C)	NF-00014946
KASH	Article	Code
	KASH - 18	NF-00014932
	KASH - 25	NF-00014933
	KASH - 35	NF-00014934
	KASH - 8	NF-00014931

SKA	Article	Code
	SKA - V - 11 -I	NF-00013081
	SKA - V - 12	NF-00015085
	SKA - V - 13 -I	NF-00013082
	SKA - V - 18	NF-00015086
	SKA - V - 18 -I	NF-00013083
	SKA - V - 24	NF-00015087
	SKA - V - 24 -I	NF-00013084
	SKA - V - 7	NF-00015083
	SKA - V - 7 -I	NF-00013079
	SKA - V - 9	NF-00015084
	SKA - V - 9 -I	NF-00013080
SKAM - IV	Article	Code
	SKAM - IV - 18 -I	NF-00013092
	SKAM - IV - 24	NF-00015088
	SKAM - IV - 24 -I	NF-00013093
	SKAM - IV - 36	NF-00015089
	SKAM - IV - 36 -I	NF-00013094
	SKAM - IV - 48	NF-00015090
	SKAM - IV - 48 -I	NF-00013090
	SKAM - IV - 60	NF-00015091
	SKAM - IV - 60 -I	NF-00013091
SKAM - II	Article	Code
	SKAM - II - 18	NF-00013088
	SKAM - II - 18 -I	NF-00015092
	SKAM - II - 24	NF-00013089
	SKAM - II - 24 -I	NF-00015093
	SKAM - II - 36	NF-00013085
	SKAM - II - 36 -I	NF-00015094
	SKAM - II - 48	NF-00013086
	SKAM - II - 48 -I	NF-00015095
	SKAM - II - 60	NF-00013087
	SKAM - II - 60 -I	NF-00015096
MZS (outdoor unit)	Article	Code
	MZS2 - 14 -I	NF-00013072
	MZS2 - 18 -I	NF-00013073
	MZS2 - 24 -I	NF-00013074
	MZS2 - 28 -I	NF-00013076
	MZS2 - 36 -I	NF-00013075
	MZS2 - 42 -I	NF-00013070
	MZS2 - 60 -I	NF-00013071

MZS (indoor unit)	Article	Code
	MZS - II - 12 -I	NF-00013062
	MZS - II - 18 -I	NF-00013063
	MZS - II - 9 -I	NF-00013061
	MZS - IV - 12 -I	NF-00013064
	MZS - IV - 18 -I	NF-00013065
	MZS - V - 12 -I	NF-00013068
	MZS - V - 18 -I	NF-00013069
	MZS - V - 7 -I	NF-00013066
	MZS - V - 9 -I	NF-00013067
	MZS - VI - 12 -I	NF-00018569
	MZS - VI - 9 -I	NF-00018568



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