

OCHSNER heat pumps

# PRICELIST

EXP | 2021

**OCHSNER**  
HEAT PUMPS



Pricelist is valid for resellers from 1 January 2021.  
The publication of this pricelist invalidates all previous pricelists.  
All prices in €, excl. VAT.

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# CLIMATE AND ENVIRONMENTAL PROTECTION ARE A PRIORITY, ESPECIALLY NOW

The world is wrestling with the fallout from the COVID-19 pandemic, and the climate emergency & biodiversity crisis have not lost any of their urgency. Quite the opposite: our society will only be able to safeguard against crisis in the long term if we better protect the environment and nature.

This crisis will not disappear as quickly as it emerged - and we will be dealing with its consequences for many years to come. However, there is another threat where the human risks are estimated to be even greater - the already evident and increasingly serious consequences of the man-made climate and biodiversity crisis. For the first time in 2020, the Global Risk Report by the World Economic Forum sets out the five greatest climate-related risks to the global economy. The climate crisis is having a bigger and more rapid impact on us than previously expected.

Our ecological footprint is far larger than is good for our planet. Greenhouse gases harmful to the climate remain in the atmosphere for many years, causing global warming increasingly the whole time. Weather extremes are at an all-time high. With increasing frequency, we are being confronted with droughts, record high temperatures and flooding even here in Austria.

At the same time, environmental researchers are warning that the growing destruction of ecosystems increases the likelihood of further pandemics. A healthy ecosystem is the basis for life: we need clean water, healthy food and, for that, fertile soil and a climate in which we humans can live. These are also ultimately the foundations for a functioning economy. Extensive climate and environmental protection measures are therefore our no. 1 priority.

## SEIZING OPPORTUNITIES IN TIMES OF CRISIS

As a result of COVID-19, society is now also struggling with a battered economy. In recent months, we have learned the importance of decisive and preventative action. This is why we must do everything possible to

ensure that the path out of the crisis leads us towards a cleaner future rather than perpetuating existing structures that do not work. Current public investment surrounding COVID-19 is setting an important course that will influence social and economic development for decades to come. "Making good choices and leaving bad choices behind" must therefore become the guiding principle for the post-COVID-19 era. More than ever, we need a climate-friendly reboot of our economy, creating new skilled jobs and opportunities for innovative companies. At the European level, a suitable political framework exists in the European Green Deal, which must be implemented quickly and comprehensively.

## ENERGY CONSUMPTION A KEY ISSUE

It is essential to cover our needs using renewable energy sources. This is the only way we can achieve the target of the Paris Climate Agreement and limit the global temperature rise to max. 1.5°C. At the same time, we need to stop humankind's hunger for energy, utilise energy more efficiently and avoid waste! Both directly through their business activities and indirectly in the manufacture and use of their products and services, companies have a major influence on energy consumption and the associated CO<sub>2</sub> emissions, with the most substantial potential for reductions. Changing the way economies are run with minimal consumption of resources and independence from fossil fuels is the only way to bring about the transition to a low carbon economy that emits as little CO<sub>2</sub> as possible and ensures the prosperity of future generations.

## ACHIEVE MORE TOGETHER

It is clear that climate protection as a whole and the preservation of ecosystems must become the focus of politics and the economy if we want to become more resilient in the long term. Even though it is difficult in the middle of a crisis to think about tomorrow and the more distant future, when is it the right time, if not now, to dare to make a new start? Nature and our climate are the basic resources that we as a society must protect better in our own interest instead of thoughtlessly continuing to deplete them. The solutions are here. Now is the time to act.

**THE ECONOMY CAN ACHIEVE A LOT - LET US GO FORWARD TOGETHER WITH THE ENVIRONMENT IN MIND. TAKE ACTION NOW!**

## YOUR WWF CONTACT

**STEFAN ROPAC**  
**MOBILE: +43 676 83488 251**  
**STEFAN.ROPAC@WWF.AT**





FOREWORD BY KARL OCHSNER

## DEAR SYSTEM PARTNERS,

The OCHSNER 2021 pricelist contains our current product range, an impressive testimony to our knowledge and technological lead gained from 115 years of heating experience and 43 years of heat pump experience.

2020 was a challenging year for all of us. We used the time to invest in the expansion of our production capacity, digitisation and especially in research & development. This has resulted in numerous new products particularly in the air/water heat pumps segment.

At entry level, we present the successor to the AIR BASIC series - the new OCHSNER AIR FALCON with OTS control and app. It features OCHSNER technology at an attractive price. With the advanced A2L refrigerant R32, its GWP is well below the legal requirements. It achieves flow temperatures of up to 60°C and has a state of the art OCHSNER TRONIC SMART control unit for remote maintenance, as well as control via the app.

Like its predecessor, the AIR FALCON is also available with the OCHSNER MULTI TOWER. This combines the heat pump indoor unit, including hydraulic components, with a buffer tank and DHW tank in a single space saving appliance.

All existing products are, of course, also subject to continuous technical optimisation. At this point, I would like to mention the most powerful DHW heat pump range on the market. The numbers of units sold in 2020 continued to rise steeply and this trend is not set to end in 2021.

With regard to customer focus and process optimisation, please refer to the "General information" section concerning your orders and your contacts at OCHSNER Internal Sales about any issues.

Finally, I would like to thank you for an extremely successful business year despite COVID-19 and I look forward to continuing this positive progress in 2021. I am certain that renewable energy in particular will benefit from the economic upturn after COVID-19. There will never be a vaccine against global warming and so the fight against climate change must once again play a central role in our joint efforts.

Karl Ochsner

# WHY OCHSNER?



## OCHSNER STANDS FOR QUALITY

### HIGH END PRODUCTION

OCHSNER heat pumps are manufactured exclusively in Austria and Germany using only high grade components. OCHSNER pays particular attention to Industrie 4.0 and the use of advanced processes, such as 3D printing.

### MOST PROFESSIONAL QUALITY MANAGEMENT

All OCHSNER heating heat pumps are manufactured specifically to customer requirements and then tested on a heat pump test bench in accordance with the EN 14511 European standard. OCHSNER quality management, however, extends far beyond the final inspection of products - all processes and departments at the company are geared towards maximum customer satisfaction.

### SPECIALIST

OCHSNER began as one of the first manufacturers in Europe to produce heat pumps on an industrial scale and offers a complete product range with heating outputs from 2 to 2500 kW. In addition to heating, cooling and DHW heating in detached houses and apartment buildings, OCHSNER heat pumps are increasingly being used in large buildings and industrial processes.



## OCHSNER STANDS FOR TECHNOLOGICAL LEADERSHIP

### HIGHEST INVESTMENT IN RESEARCH & DEVELOPMENT

OCHSNER also makes an important contribution to climate protection through intensive research & development for ever more efficient and energy saving products. OCHSNER invests approx. 6% of turnover and 15% of its personnel resources in this area every year. This results in products that have, for many years now, achieved record-breaking levels of efficiency and outstandingly low noise levels.

### SMART CONTROL

The OTS home climate manager is an innovative heat pump controller developed by OCHSNER. Through the interaction of the OTS with energy management, smart home and building management systems, the heat pump system becomes a key player in optimising energy costs. Operation is performed on the heat pump or via the OTS app on your smartphone.

### TECHNOLOGY AND QUALITY ADVANTAGE

Numerous technical characteristics are testimony to the technical and quality advantage OCHSNER enjoys in the heat pump market. In addition to those already mentioned, these include:

- Limits of use for air/water heat pumps up to -23°C
- Heating heat pumps up to 65°C flow temperature, high capacity heat pumps up to 98°C and high temperature heat pumps up to 130°C flow temperature
- Water/water heat pumps with shell and tube heat exchanger as evaporator (AQUA M4)
- Auto-adaptive (self-learning) heating curve
- maximum availability thanks to safety management
- Prime quality scroll compressors



## OCHSNER STANDS FOR RESPONSIBILITY

### 75% ENVIRONMENTAL ENERGY

Three quarters of our energy is freely available from the ground, groundwater or the ambient air - this makes the heat pump the most cost effective and environmentally and climate friendly technology for heat generation.

### INDEPENDENCE

The heat pump offers independence from oil and gas and price fluctuations on the commodity markets, as well as safe and pollutant-free on-site operation. A storage room, boiler service, chimney sweep, oil top-ups and unpleasant odours or dust, etc. are a thing of the past. Above all, it is the only heating system to offer the option not only for heating, but also for cooling - without draughts or noise.

### STRENGTH FROM TRADITION

The OCHSNER family business goes way back to 1872. 115 years ago, OCHSNER started its production of components for heating technology. OCHSNER Wärmepumpen GmbH was founded 1978 and the company has become synonymous with energy awareness, a pioneering spirit and a flair for innovation. Today, OCHSNER is recognised as one of the sector's international technology leaders. Since 1992, the company has concentrated solely on the development and manufacture of heat pumps. In 2022 OCHSNER celebrates its 150th anniversary.



## OCHSNER STANDS FOR SAFETY

### USE OF SAFE REFRIGERANT

OCHSNER already uses only refrigerants that satisfy the future requirements of the EU F-gas Regulation. For our company, protecting human life and material assets has top priority, which is why OCHSNER forbids the use of highly combustible, explosive and toxic refrigerants such as propane, both now and in the future.

### LONG SERVICE LIFE AND QUIET OPERATION

OCHSNER heat pumps regularly achieve record-breaking levels of efficiency, outstandingly low noise levels and ensure the lowest heating costs. In geothermal energy, too, OCHSNER is a leader in energy efficiency. All OCHSNER heat pumps have the European EHPA Quality Label.

### OCHSNER CUSTOMER SERVICE

At OCHSNER, the personal care does not end once a system is sold. In-house technical customer service - comprising qualified heat pump specialists certified in accordance with the EU F-gas Regulation - commissions every heating heat pump in person in the main markets and provides system support for the entire product life.



# FOR ME AND NATURE

OCHSNER heat pumps utilise solar energy stored in the air, in water or in the ground for heating, cooling and DHW heating in buildings, thereby making a valuable contribution to our environment. Through the sale and installation of high quality and efficient heat pump systems, you can lead the way and actively contribute towards climate protection.

## OCHSNER AND THE WWF

As partners of the WWF CLIMATE GROUP, OCHSNER and other renowned companies are committed to effective climate protection. Together, we aim to bring climate-conscious thinking and action into the mainstream of politics, industry and society, making it second nature for our employees.

## SAVING 2.5 MILLION TONNES IN CO<sub>2</sub>

Thanks to our OCHSNER heat pumps, customers have been able to reduce CO<sub>2</sub> emissions by nearly 2.5 million tonnes since 1978!

## ISO 14001 CERTIFIED

With certification to ISO 14001, high environmental standards are verifiably implemented at the company.

## OCHSNER IS SMART GRID READY

Smart grid functionality will allow you to take advantage of attractive tariffs for operating your heat pump interactively with the grid of the future.





# PRODUCT INNOVATIONS



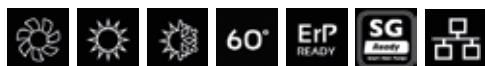
## AIR FALCON 212

THE PRICE/PERFORMANCE STAR FROM OCHSNER -  
NOW ALSO WITH MULTI TOWER

The AIR FALCON 212 air/water heat pump offers OCHSNER technology at an attractive entry-level price. Now, the proven MULTI TOWER is also available for the AIR FALCON 212.

The MULTI TOWER combines the heat pump indoor unit with hydraulic components such as a buffer tank and a DHW tank in a single space saving appliance.

- Inverter air/water heat pump
- OTS controller
- A2L heat transfer medium R32 (low GWP)
- Flow temperatures up to 60°C



**OTS**  
OCHSNER TRONIC SMART

## OCHSNER TRONIC SMART

THE NEW HEAT PUMP  
CONTROLLER



The new OCHSNER Tronic Smart (OTS) home climate manager together with the state of the art OTS app (Android and iOS) offers outstanding new features, such as more comprehensive connectivity options and improved reliability and efficiency of the refrigerant circuit.

## OTE MODBUS GATEWAY

THE GATEWAY FOR IMPROVED CONNECTIVITY IN  
HEAT PUMPS WITH OTE



The OCHSNER Tronic Easy (OTE) controller is still at the heart of many OCHSNER heat pumps. For On/Off heating heat pumps with an OTE-3 controller, OTE Modbus gateway is now available for Modbus communication with building management or smart home systems.

OCHSNER EUROPA

# HOT WATER HEAT PUMPS





EUROPA series hot water heat pumps are the ideal supplement to any heating system. Besides efficient and environmentally friendly DHW heating, these offer numerous additional benefits such as the cooling or ventilation of pantries/storage rooms and much more.

## DHW HEATING

### WHY NOT WITH THE HEATING CIRCUIT?

When, in the 1960s, oil fired central heating systems became the standard, it was considered convenient to use them to also heat DHW throughout the year. From today's perspective, however, it is wrong to consider DHW heating as a "cheap" by-product of central heating. This is especially true for oil and gas appliances and outside the heating season: The appliances are designed for heating the building and are therefore oversized for DHW heating.

### COMPARISON OF SYSTEMS FOR DHW HEATING

Heating the system – consisting of burner, boiler, flue and hot water transfer – up to operating temperature uses as much energy as would be required just for the actual DHW heating.

At today's, let alone future energy prices, these high "standby losses" are unacceptable, not to mention the disproportionate additional strain on the environment.

If you heat your domestic hot water with an average oil boiler in summer, only about 25% of the primary energy input is made available in the form of DHW. To heat DHW, heating heat pumps must work at a higher temperature lift than would be necessary in heating mode. This reduces the coefficients of performance. It therefore makes sense to use a separate hot water heat pump.

# OCHSNER EUROPA

**AIR/EXHAUST AIR HOT WATER HEAT PUMP**  
MULTIFUNCTIONAL APPLIANCE



- COMPACT UNIT INCL. TANK
- DELIVERY CLASS I

UNIT TYPE	EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL
Order no.	110280	110295	110220	110225
<b>PRICE €</b>	<b>3.663,-</b>	<b>3.012,-</b>	<b>2.760,-</b>	<b>2.288,-</b>
<b>Performance figures (EN16147)</b>				
Air inlet temperature	A20	A15	A15	A15
Load profile	XL	XL	L	L
Coefficient of performance (COP)	3,82	3,40	2,71	2,71
Heat-up time	6h 42min	8h 04min	6h 54min	6h 54min
Max. usable amount of water	I 375	379	288	288
Reference DHW temperature	°C 52,1	55,0	52,5	52,5
Average heating output	kW 2,18	1,96	1,68	1,68
Average power consumption	kW 0,52	0,50	0,48	0,48
SCOPw (VDI 4650-1:2016)	4,73	4,25	3,38	3,38

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

Energy efficiency class (F to A+)	A+	A+	A+	A+
Load profile	XL	XL	L	L
DHW heating efficiency, ETAwh	% 155	138	115	115



EUROPA 333 Genius  
300 l DHW tank



EUROPA 300 L  
300 l DHW tank



EUROPA 250 DK, EUROPA 250 DKL  
250 l DHW tank



INCLUDED AS STANDARD		EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL		
Coil (for boilers/solar thermal systems)		+	-	+	-		
Modbus communication (building management, Smart Home systems)		+	-	-	-		
Infinitely variable air flow rate controller		+	+	-	-		
Time programs for DHW and ventilation mode		+	+	-	-		
Smart grid ready		+	+	-	-		
Defrost technology		+	-	-	-		
Frost protection shutdown		+	+	+	+		
Anti-legionella mode		+	+	+	+		
OPTIONALLY AVAILABLE		EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL	Order no.	Price €
Transport aid for EUROPA		+	+	+	+	936132	721,-
APPLIANCE DATA		EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL		
Dimensions (height x diameter)	mm	1838x657	1838x657	1625x657	1625x657		
Weight (excl. packaging)	kg	124	101	109	94		
Controller type		Tiptronic Plus S (touchscreen)	Tiptronic Plus S (touchscreen)	Tiptronic light	Tiptronic light		
Phases/nominal voltage/frequency	~/V/Hz	1/~220-240/50	1/~220-240/50	1/~220-240/50	1/~220-240/50		
Fuse protection		1x C13A 1p	1x C13A 1p	1x C16A 1p	1x C16A 1p		
Max. operating current	A	10,2	10,2	4,0	4,0		
Refrigerant		R134a	R134a	R134a	R134a		
Condenser type (WNA)		Rollbond	Rollbond	Rollbond	Rollbond		
Condenser material (WNA)		Aluminium	Aluminium	Aluminium	Aluminium		
Compressor type		Rotary piston	Rotary piston	Rotary piston	Rotary piston		
Sound power level (EN12102)	dB(A)	57,9	57,0	57,9	57,9		
Sound pressure level (at 1 m)	dB(A)	49,0	49,0	49,0	49,0		
Max. DHW temperature, heat pump operation	°C	65	65	65	65		
Air flow rate (infinitely variable)	m³/h	192 - 711	50 - 517	-	-		
Air flow rate	m³/h	-	-	510	510		
External pressure	Pa	80	80	80	80		
Evaporator type		Air/finned tube	Air/finned tube	Air/finned tube	Air/finned tube		
Evaporator material		Copper/aluminium	Copper/aluminium	Copper/aluminium	Copper/aluminium		
Operating temperature min. / max.	°C	-10 / 40	6 / 40	6 / 40	6 / 40		
DHW tank							
Nominal capacity	l	300	300	250	250		
Permissible operating pressure	bar	6	6	6	6		
Tank material		Enamelled steel	Enamelled steel	Enamelled steel	Enamelled steel		
Thermal insulation		Rigid PU foam (50 mm)	Rigid PU foam (50 mm)	Rigid PU foam (50 mm)	Rigid PU foam (50 mm)		
Standby heat loss	W	89	89	78	78		
Anti-corrosion anode		1 x 5/4" mains current anode	1 x 1" magnesium	1 x 5/4" magnesium	1 x 5/4" magnesium		
Auxiliary electric immersion heater							
Electric immersion heater internal / adjustable	kW	1,4 / Yes	1,5 / No	1,5 / No	1,5 / No		
Electric immersion heater stages (fixed/adjustable)	kW	0,7/0,7	-	-	-		
Auxiliary heating by electric immersion heater up to max.	°C	65	65	65	65		
Auxiliary heater coil							
Coil type		Smooth tube 3/4"		Smooth tube 3/4"			
Coil surface area	m²	1,4		1,0			
Auxiliary heating by boiler up to max.	°C	65		65			

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (EUROPA).

# OCHSNER EUROPA MINI

**AIR/EXHAUST AIR HOT WATER HEAT PUMP**  
MULTIFUNCTIONAL APPLIANCE



- SPLIT APPLIANCE WITHOUT TANK
- DELIVERY CLASS I

UNIT TYPE	EUROPA MINI IWP	EUROPA MINI IWPL
Order no.	110246	110244
PRICE €	2.582,-	2.204,-
<b>Performance figures (EN16147)</b>		
Air inlet temperature	A15	A15
Load profile	XL	XL
Coefficient of performance (COP)	3,16	2,71
Heat-up time	8h 18min	9h 00min
Max. usable amount of water	l	
	373	357
Reference DHW temperature	°C	
	54,4	52,5
Average heating output	kW	
	1,90	1,68
Average power consumption	kW	
	0,51	0,48
SCOPw (VDI 4650-1:2016)		
	4,34	3,38

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

Energy efficiency class (F to A+)	A+	A
Load profile	XL	XL
DHW heating efficiency, ETAwh	%	
	129	120



Package solution  
EUROPA Mini with DHW tank



TWIN package solution  
2 pce EUROPA Mini with DHW tank

<sup>1)</sup>With the EUROPA MINI Twin package, one flange plate for one anti-corrosion anode supplied with product.

INCLUDED AS STANDARD		EUROPA MINI IWP	EUROPA MINI IWPL
Wall bracket (525 mm height x 700 mm projection)		2 pce	2 pce
Circulation pump ZRS 12/4-3		1 pce	1 pce
Infinitely variable air flow rate controller		+	-
Time programs for DHW and ventilation mode		+	-
Smart grid ready		+	-
Defrost technology		+	-
Frost protection shutdown		+	+
Anti-legionella mode		+	+

OPTIONALLY AVAILABLE		EUROPA MINI IWP	EUROPA MINI IWPL	Order no.	Price €
Flange plate for electric immersion heater		+	+	920111	72,-
Electric immersion heater		+	-	See page 94	

APPLIANCE DATA		EUROPA MINI IWP	EUROPA MINI IWPL
Dimensions (height x diameter)	mm	432x657	432x657
Weight (excl. packaging)	kg	45	45
Controller type		Tiptronic Plus (touchscreen)	Tiptronic light
Phases/nominal voltage/frequency	~/V/Hz	1/~220-240/50	1/~220-240/50
Fuse protection		1x C16A 1p	1x C16A 1p
Max. operating current	A	4,0	4,0
Refrigerant		R134a	R134a
Condenser type (WNA)		Plate heat exchanger	Plate heat exchanger
Condenser material (WNA)		Stainless steel 1.4301	Stainless steel 1.4301
Compressor type		Rotary piston	Rotary piston
Sound power level (EN12102)	dB(A)	57,0	57,0
Sound pressure level (at 1 m)	dB(A)	49,0	49,0
Max. DHW temperature, heat pump operation	°C	60	60
Air flow rate (infinitely variable)	m³/h	360 - 510	-
Air flow rate	m³/h	-	510
External pressure	Pa	80	80
Evaporator type		Finned tube heat exchanger	Finned tube heat exchanger
Evaporator material		Copper/aluminium	Copper/aluminium
Operating temperature min. / max.	°C	-10 / 40	6 / 40

DHW tank (not supplied)			
Max. tank volume	l	500	500

Auxiliary electric immersion heater (not supplied)			
Max. connected load	kW	2,5	-

PACKAGE: EUROPA MINI WITH 300 L TANK		Order no.	Price €
EUROPA Mini IWP package price 300 l		180012	3.826,-
EUROPA Mini IWPL package price 300 l		180013	3.448,-

PACKAGE: EUROPA MINI WITH 500 L TANK		Order no.	Price €
EUROPA Mini IWP package price 500 l		180016	4.277,-
EUROPA Mini IWPL package price 500 l		180017	3.899,-

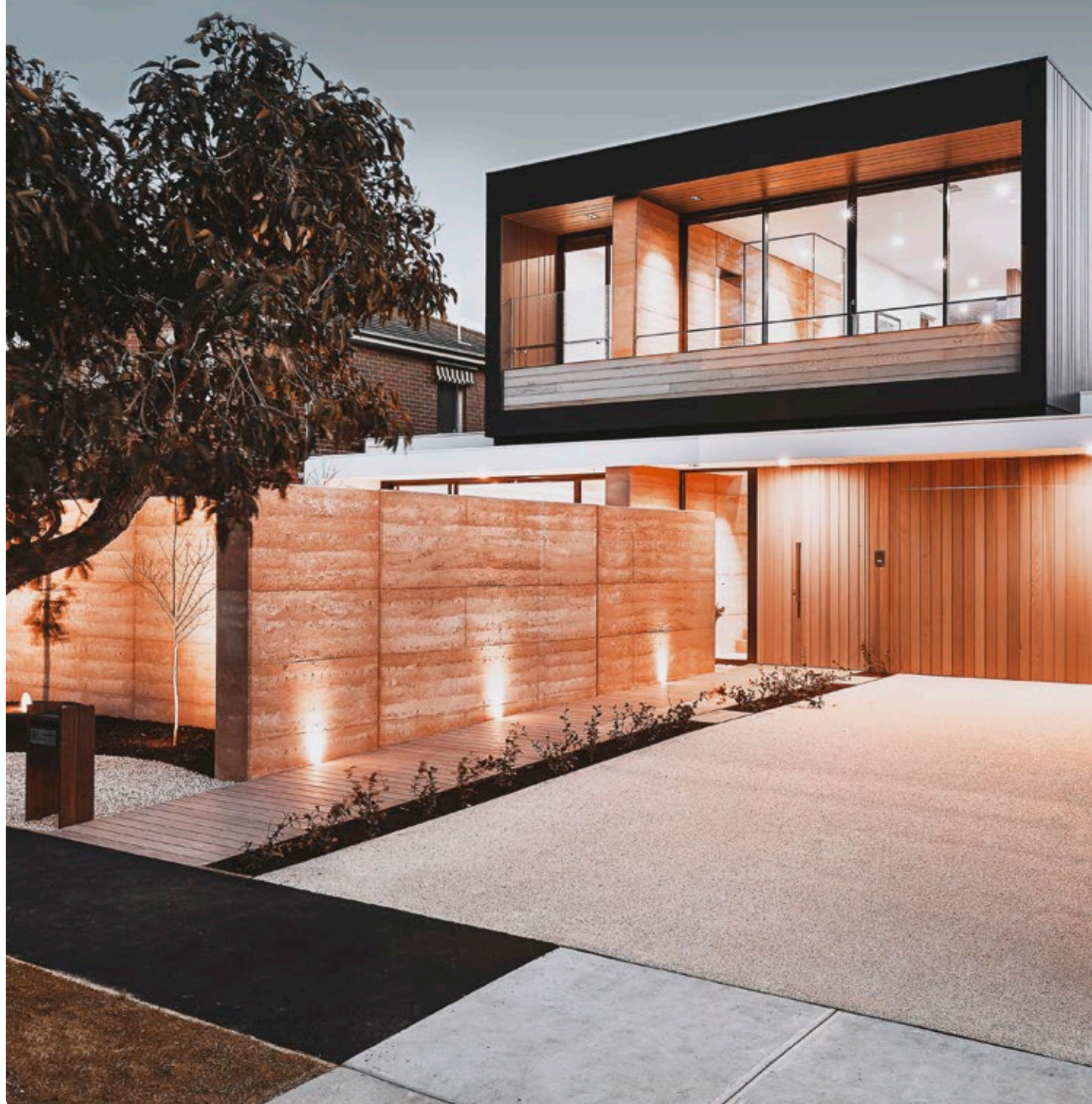
TWIN PACKAGE: EUROPA MINI (2 PCE) WITH 750 L TANK		Order no.	Price €
EUROPA Mini IWP TWIN package 750 l <sup>1)</sup>		180020	7.833,-
EUROPA Mini IWPL TWIN package 750 l <sup>1)</sup>		180021	7.077,-

**Notes:**

- The performance figures (EN16147) have been determined in combination with the SP300 tank.
- For details on DHW tanks, see Accessories section (tanks).
- Please observe the machine-specific engineering and installation information, see Design section (EUROPA).

OCHSNER

# HEATING HEAT PUMPS







## THE NEW GENERATION OF HIGH-TECH HEAT PUMPS

The technical design of the appliances has been conceived in cooperation with experienced OCHSNER contractors.

They have been designed to cut the system costs, installation times and required space. Many system components are already integrated in the heat pump, which reduces the total cost of the installation.

The straightforward installation and removal of the casing panels was a key consideration. There are no visible screws. Individual parts can be removed quickly and easily by releasing just a few connections.

# CUSTOMISABLE...

Choose your preferred colour for the outdoor unit of your AIR M2/M4 or AIR HAWK series heat pump. In addition to the standard colours - anthracite grey, traffic white or white aluminium - OCHSNER also offers a multitude of other colours to allow the outdoor unit to blend perfectly into its surroundings. Choose your favourite colour from 1625 RAL shades for your outdoor unit. Order based on sample cards "RAL Classic K7" and "RAL Design D2".



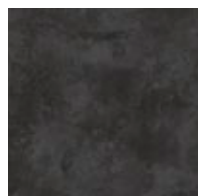
## SURCHARGES FOR CUSTOM OUTDOOR UNIT COLOUR

	Delivery class	Components	Models	Order no.	Price €
Traffic white (RAL 9016)	II	Outdoor unit	AIR 11 - 41, AIR HAWK	290735	0,-
White aluminium (RAL 9006)	II	Outdoor unit	AIR 11 - 41	290929	0,-
Anthracite grey (RAL 7016)	II	Outdoor unit	AIR HAWK	290928	0,-
Custom RAL colour	III	Outdoor unit	AIR 11 - 18, AIR HAWK	290736	1.440,-
			AIR 23 - 41	290737	1.977,-
		Super Silent Package (SSP)	AIR 11 - 18	290827	219,-
			AIR 23 - 41	290828	396,-
		Snow cover	AIR 11 - 41	290699	184,-
		SSP snow cover	AIR 11 - 41	290872	288,-
		Vertical casing for connection line	AIR 11 - 23, AIR HAWK	290672	112,-

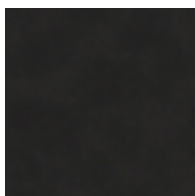
## SURFACE DESIGNS FOR M2/M4 INDOOR UNITS

By incorporating natural, warm materials, a technical product can be transformed into a piece of furniture – why not configure your heat pump to suit your own personal preferences? Silk matt and satin finish surfaces make your heat pump pleasant to the touch.

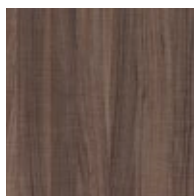
### 1 SURFACE DESIGNS



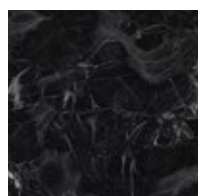
Vulcano



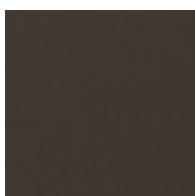
Space



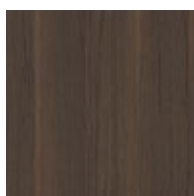
Havanna



Mythos



Amaron



Muskat

Surface designs		Order no.	Price €
Stone look	Vulcano	980181	215,-
	Mythos	980183	215,-
Leather look	Space	980182	215,-
	Amaron	980185	215,-
Wood look	Havanna	980184	215,-
	Muskat	980186	215,-

Due to the printing process, the surfaces depicted here may differ from the original surface finishes. For the surface designs, sample cards are available. For further information, contact your OCHSNER sales partner.



## STANDARD COLOURS AND CUSTOM COLOURS FOR OUTDOOR UNITS



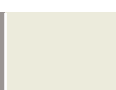
**Standard colour AIR 11 - 41:**  
RAL 7016, anthracite grey



**Standard colour AIR HAWK:**  
RAL 9006, white aluminium



RAL 9022  
Pearl light grey



RAL 9002  
Grey white



RAL 1015  
Light ivory



RAL 1021  
Colza yellow



RAL 1018  
Zinc yellow



RAL 3016  
Coral red



RAL 3000  
Flame red



RAL 3005  
Wine red



RAL 1036  
Pearl gold



RAL 6010  
Grass green



RAL 6002  
Leaf green



RAL 6005  
Moss green



RAL 5003  
Sapphire blue



RAL 8028  
Terra brown



RAL 8016  
Mahogany brown



RAL 9011  
Graphite black

Because of the 3-layer paint used, the actual colour of the outdoor unit can deviate from the RAL sample card.

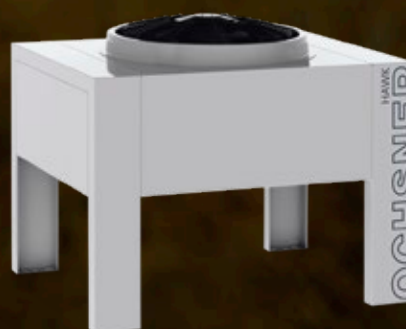
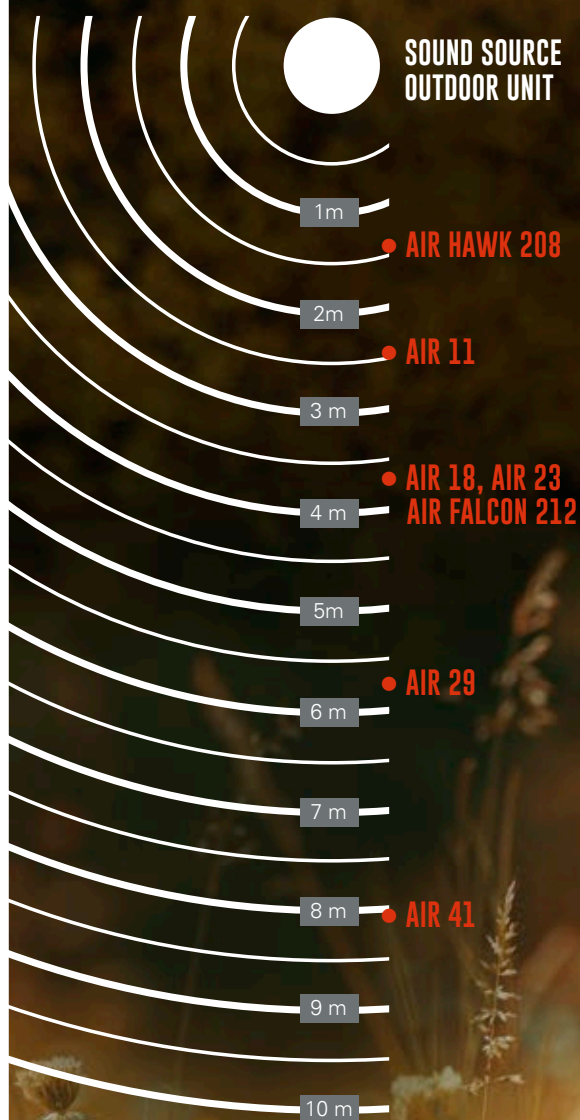


# EXTREMELY QUIET HEAT PUMPS



Air/water heat pumps from OCHSNER are the quietest on the market. In many regions, 35 dB, which corresponds approximately to whispering or rustling of leaves, must not be exceeded at the property boundary.

The figure below shows the distance at which an OCHSNER outdoor unit may be positioned from the property boundary without exceeding 35 dB.



**Note:**

The sound levels in the figure were calculated using the sound calculator of "Wärmepumpe-Austria" ([www.waermepumpe-austria.at/schallrechner](http://www.waermepumpe-austria.at/schallrechner)).



# NEW GENERATION HYDRAULIC VERSIONS

Especially in the M2 and M4 series, various components, such as an electric immersion heater or a 3-way switching module can optionally be factory-installed in the indoor unit. These factory-installed components are functionally tested on the production line test rig, thereby cutting the time and cost of installation.

## HYDRAULIC VERSIONS

## ACCESSORIES

							Electric immersion heater		3-way switching module for DHW heating	
							Internal	external	Internal	external
<b>M1-5</b>	<b>M2-1</b>	<b>M2-5</b>	<b>M4-1</b>	<b>G1-1</b>	<b>T200</b>		+		+	
	<b>M2-2</b>		<b>M4-2</b>					o	+	
	<b>M2-3</b>		<b>M4-3</b>				+			o
	<b>M2-4</b>		<b>M4-4</b>			<b>M6</b>		o		o

Either factory-fitted in the unit or install on site as an accessory.

## SERIES

AIR	-	+	-	+	-	-	+
AIR HAWK	-	-	+	-	-	-	-
AIR FALCON	+	-	-	-	-	+	-
AIR EAGLE	-	-	-	-	+	-	-
TERRA DX	-	+	-	+	-	-	-
TERRA	-	+	-	+	-	-	+
AQUA	-	-	-	+	-	-	+

**+** INSTALLED AS STANDARD in indoor unit and fully wired

**(+)** INCLUDED IN SCOPE OF DELIVERY, to be installed externally on site

**-** NOT AVAILABLE

**o** OPTIONAL choice

## ACCESSORIES

5-point anti-vibration system	-	+	+	+	-	-	+
Flexible hoses	-	+	+	+	-	+	(+)
WNA circulation pump	+	+	+	+	+	+	o
Flow meter, WNA	+	+	+	+	+	+	(+)
Diaphragm expansion vessel, WNA	+	+	+	-	+	-	-
Safety valve WNA	+	+	+	+	+	+	-
WQA circulation pump TERRA	-	+	-	+	-	-	o
WQA flow meter TERRA/AQUA	-	+	-	+	-	-	(+)
Diaphragm expansion vessel, WQA TERRA	-	+	-	+	-	-	-
Safety valve, WQA TERRA	-	+	-	+	-	-	-

## Please note:

For air/water heat pumps, an internal or external electric immersion heater is required.

At more than 8.8 kW required electric immersion heater output, the electric immersion heaters must be installed only in the heat pump buffer tank. The hydraulic versions M4-2/M2-2 and M4-4/M2-4 are available for this purpose.

Depending on the system design, an external WNA diaphragm expansion vessel may be required.



M1

M2 / M4

G1-1

T200

M6

**”**  
**NOW EVEN QUIETER**

thanks to the 5-point noise reduction system for the new generation M2/M4/M6

WNA = heat sink system  
WQA = heat source system  
DHW = domestic hot water

OCHSNER AIR

# AIR/WATER HEAT PUMPS



## PRODUCT OVERVIEW

### SUITABLE FOR

Detached and two-family houses

Apartment and commercial buildings

Radiators up to 60°C

Underfloor heating

### FUNCTION AND FEATURE

Heating

Active cooling

Inverter technology (output-dependent compressor)

Master/slave cascade possible

### DHW HEATING

DHW heating possible

DHW heating possible > 60°C

Integrated DHW tank

### APPLIANCE POSITIONING

Indoor installation

Split installation (indoor and an outdoor unit)



AIR 11 AIR 18	AIR 23 AIR 29 AIR 41	AIR 80	AIR HAWK 208	AIR FALCON 212 M1-5	AIR FALCON 212 T200	AIR EAGLE 414 AIR EAGLE 717 G1-1	OLWI 9 OLWI 13 OLWI 18
■			■	■	■	■	■
	■	■					
■	■	■	■			■	
■	■	■	■	■	■	■	■
■							
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	
			■	■	■	■	
	■	■					
■	■	■	■	■	■	■	■
■	■	■	■	■ 2)	■ 2)	■	■ 2)
					■		
							■
■	■	■	■	■	■	■	

Suitable building heat load in kW <sup>1)</sup>

	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	-	40	42	-	50	-	78	See page
AIR 11				■	■	■	■	■	■	■													24
AIR 18					■	■	■	■	■	■	■	■	■	■	■								24
AIR 23						■	■	■	■	■	■	■	■	■	■								28
AIR 29							■	■	■	■	■	■	■	■	■								28
AIR 41								■	■	■	■	■	■	■	■	■	■	■					28
AIR 80																			■	■	■	■	30
AIR HAWK 208		■	■	■	■	■	■	■	■	■	■	■	■	■	■								32
AIR FALCON 212			■	■	■	■	■	■	■	■	■	■	■	■	■								34
AIR EAGLE 414				■	■	■	■	■	■	■	■	■	■	■	■								38
AIR EAGLE 717					■	■	■	■	■	■	■	■	■	■	■								38
OLWI 9				■	■	■	■	■	■	■	■	■	■	■	■								40
OLWI 13					■	■	■	■	■	■	■	■	■	■	■								40
OLWI 18								■	■	■	■	■	■	■	■								40

**AIR MULTI: Cascade packages**

For heating outputs up to 164 kW, cascade packages are available. See page: 42

■ Available

<sup>1)</sup> Guide values for product selection. A system-specific layout is required. The "Suitable building heat load" figures are guide values for systems in the "Average" climate zone (as per ErP Directive).

<sup>2)</sup> Electrical auxiliary heater active.

# OCHSNER AIR M2

**AIR/WATER HEAT PUMP, SPLIT VERSION**  
INCL. HORIZONTAL SPLIT EVAPORATOR



- M2/M4 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AIR 11 C11A	AIR 18 C11A
Order no.		287020	287030
PRICE €		15.434,-	16.790,-
<b>Building heat load</b>			
Suitable building heat load	kW	7 - 12	11 - 18
<b>A7/W35</b>			
Heating output (EN14511)	kW	10,20	15,10
Power consumption (EN14511)	kW	2,30	3,00
Coefficient of performance COP (EN14511)		4,50	5,00
<b>A2/W35</b>			
Heating output (EN14511)	kW	8,80	13,20
Power consumption (EN14511)	kW	2,20	3,00
Coefficient of performance COP (EN14511)		4,00	4,40
<b>A-7/W35</b>			
Heating output (EN14511)	kW	6,80	10,60
Power consumption (EN14511)	kW	2,00	3,00
Coefficient of performance COP (EN14511)		3,30	3,60
<b>A2/W60</b>			
Heating output (EN14511)	kW	7,60	12,10
Power consumption (EN14511)	kW	3,20	4,40
Coefficient of performance COP (EN14511)		2,40	2,80
<b>A30/W7</b>			
Cooling capacity (EN14511)	kW	8,70	10,70
Power consumption (EN14511)	kW	2,90	3,30
Energy efficiency ratio EER (EN14511)		3,00	3,20

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A++	A++	A+++	A++
P rated	kW	8	9	12	13
Efficiency ETAs	%	163	126	182	133
SCOP		4,21	3,30	4,70	3,48



Outdoor unit standard configuration  
Total height: 1104 mm



Outdoor unit with snow cover  
Total height: 1260 mm



Outdoor unit with SSP and snow cover  
Total height: 1695 mm

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> For an air/water heat pump, an additional heat generator (e.g. electric immersion heater) is essential.

<sup>3)</sup> If an internal 3-way switching module is selected as an accessory, control of an external auxiliary heat generator for DHW heating is not possible.



INCLUDED AS STANDARD		AIR 11 C11A	AIR 18 C11A		
Flow meter (WNA), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce		
Flexible hoses, internal		+	+		
OPTIONALLY AVAILABLE		AIR 11 C11A	AIR 18 C11A	Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display		+	+	980152	609,-
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+	+	980169	573,-
Electricity meter I		+	+	980187	351,-
Internal electric immersion heater (8.8 kW) <sup>2)</sup>		+	+	980197	128,-
3-way switching module, internal <sup>3)</sup>		+	+	980198	244,-
External electric immersion heater (9 kW) <sup>2)</sup>		+	+	922509	309,-
3-way switching module (DN 32), external		+	+	290229	298,-
Indoor unit surface design		+	+	See page 19	
DHW tank/buffer tank		+	+	See page 81	
Connection line to outdoor unit		+	+	See page 44	
INDOOR UNIT		AIR 11 C11A	AIR 18 C11A		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	124	135		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C10A 3p	1x C16A 3p		
Max. operating current	A	7,9	11,4		
Max. starting current	A	20	32		
Refrigerant		R407C	R407C		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	1,70	2,20		
Internal pressure differential (WNA), M2-1/M4-1	mbar	205	324		
Compressor type		Scroll	Scroll		
OUTDOOR UNIT		AIR 11 C11A	AIR 18 C11A		
Unit type		VHS-M 9	VHS-M 14		
Dimensions (HxWxD)	mm	1104x1292x965	1104x1292x965		
Weight (excl. packaging)	kg	93	93		
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)		
Operating mode		Nominal	Silent mode	Nominal	Silent mode
Sound pressure level (at 3 m)	dB(A)	32,9	30,9	36,5	33,5
Sound power level (EN12102)	dB(A)	50	48	54	51
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR 11 C11A	AIR 18 C11A	Order no.	Price €
Snow cover (grey, RAL 7016)		1 pce	1 pce	915763	184,-
Super Silent Package (SSP), 3 dB(A) sound reduction		1 pce	1 pce	290553	715,-
SSP snow cover (grey, RAL 7016)		1 pce	1 pce	915732	288,-
Vertical casing for connection line (grey, RAL 7016)		1 pce	1 pce	915616	112,-
Custom outdoor unit colour		+	+	See page 18	
Outdoor unit version for coastal installation		+	+	on request	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- Please observe the machine-specific engineering and installation information, see Design section (AIR On/Off). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR M2

**AIR/WATER HEAT PUMP, SPLIT VERSION**  
INCL. HORIZONTAL SPLIT EVAPORATOR



- M2/M4 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AIR 11 C11B	AIR 18 C11B
Order no.		287022	287032
PRICE €		15.434,-	16.790,-
<b>Building heat load</b>			
Suitable building heat load	kW	7 - 12	11 - 18
<b>A7/W35</b>			
Heating output (EN14511)	kW	10,20	14,80
Power consumption (EN14511)	kW	2,40	3,30
Coefficient of performance COP (EN14511)		4,30	4,50
<b>A2/W35</b>			
Heating output (EN14511)	kW	8,90	13,00
Power consumption (EN14511)	kW	2,30	3,20
Coefficient of performance COP (EN14511)		4,00	4,00
<b>A-7/W35</b>			
Heating output (EN14511)	kW	6,90	10,10
Power consumption (EN14511)	kW	2,20	3,20
Coefficient of performance COP (EN14511)		3,10	3,10
<b>A2/W60</b>			
Heating output (EN14511)	kW	8,40	11,50
Power consumption (EN14511)	kW	3,30	4,50
Coefficient of performance COP (EN14511)		2,50	2,60
<b>A30/W7</b>			
Cooling capacity (EN14511)	kW	8,60	9,30
Power consumption (EN14511)	kW	3,10	3,40
Energy efficiency ratio EER (EN14511)		2,80	2,70

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A++	A++	A+++	A++
P rated	kW	8	9	12	13
Efficiency ETAs	%	163	126	182	133
SCOP		4,21	3,30	4,70	3,48



Outdoor unit standard configuration  
Total height: 1104 mm



Outdoor unit with snow cover  
Total height: 1260 mm



Outdoor unit with SSP and snow cover  
Total height: 1695 mm

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> For an air/water heat pump, an additional heat generator (e.g. electric immersion heater) is essential.

<sup>3)</sup> If an internal 3-way switching module is selected as an accessory, control of an external auxiliary heat generator for DHW heating is not possible.

INCLUDED AS STANDARD		AIR 11 C11B	AIR 18 C11B		
Flow meter (WNA), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce		
Flexible hoses, internal		+	+		
OPTIONALLY AVAILABLE		AIR 11 C11B	AIR 18 C11B	Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display		+	+	980152	609,-
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+	+	980169	573,-
Internal electric immersion heater (8.8 kW) <sup>2)</sup>		+	+	980197	128,-
3-way switching module, internal <sup>3)</sup>		+	+	980198	244,-
External electric immersion heater (9 kW) <sup>2)</sup>		+	+	922509	309,-
3-way switching module (DN 32), external		+	+	290229	298,-
Indoor unit surface design		+	+	See page 19	
DHW tank/buffer tank		+	+	See page 81	
Connection line to outdoor unit		+	+	See page 44	
INDOOR UNIT		AIR 11 C11B	AIR 18 C11B		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	124	135		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~/V/Hz	1/~220-240/50	1/~220-240/50		
Fuse protection		1x C25A 1p	1x C40A 1p		
Max. operating current	A	20,8	30		
Max. starting current	A	48,5	44,6		
Refrigerant		R407C	R407C		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	1,70	2,20		
Internal pressure differential (WNA), M2-1/M4-1	mbar	205	324		
Compressor type		Scroll	Scroll		
OUTDOOR UNIT		AIR 11 C11B	AIR 18 C11B		
Unit type		VHS-M 9	VHS-M 14		
Dimensions (HxWxD)	mm	1104x1292x965	1104x1292x965		
Weight (excl. packaging)	kg	93	93		
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)		
Operating mode		Nominal	Silent mode	Nominal	Silent mode
Sound pressure level (at 3 m)	dB(A)	32,9	30,9	36,5	33,5
Sound power level (EN12102)	dB(A)	50	48	54	51
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR 11 C11B	AIR 18 C11B	Order no.	Price €
Snow cover (grey, RAL 7016)		1 pce	1 pce	915763	184,-
Super Silent Package (SSP), 3 dB(A) sound reduction		1 pce	1 pce	290553	715,-
SSP snow cover (grey, RAL 7016)		1 pce	1 pce	915732	288,-
Vertical casing for connection line (grey, RAL 7016)		1 pce	1 pce	915616	112,-
Custom outdoor unit colour		+	+	See page 18	
Outdoor unit version for coastal installation		+	+	on request	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- Please observe the machine-specific engineering and installation information, see Design section (AIR On/Off). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR M4

**AIR/WATER HEAT PUMP, SPLIT VERSION**  
INCL. HORIZONTAL SPLIT EVAPORATOR

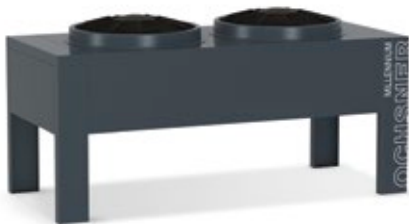


- M2/M4 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

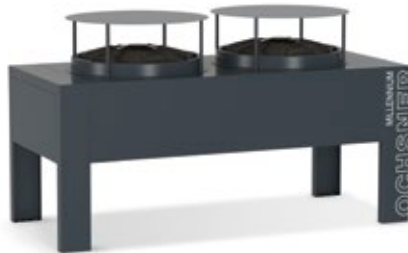
UNIT TYPE		AIR 23 C12A	AIR 29 C12A	AIR 41 C12A
Order no.		287040	287050	287060
PRICE €		20.358,-	23.718,-	27.185,-
<b>Building heat load</b>				
Suitable building heat load	kW	17 - 22	22 - 28	28 - 41
<b>A7/W55</b>				
Heating output (EN14511)	kW	-	27,00	34,00
Power consumption (EN14511)	kW	-	8,50	11,30
Coefficient of performance COP (EN14511)		-	3,20	3,00
<b>A7/W35</b>				
Heating output (EN14511)	kW	20,70	26,50	37,00
Power consumption (EN14511)	kW	4,50	6,40	8,80
Coefficient of performance COP (EN14511)		4,60	4,20	4,20
<b>A2/W60</b>				
Heating output (EN14511)	kW	16,40	-	-
Power consumption (EN14511)	kW	5,80	-	-
Coefficient of performance COP (EN14511)		2,80	-	-
<b>A2/W35</b>				
Heating output (EN14511)	kW	17,20	21,10	28,00
Power consumption (EN14511)	kW	4,10	5,90	8,00
Coefficient of performance COP (EN14511)		4,20	3,60	3,50
<b>A-7/W35</b>				
Heating output (EN14511)	kW	13,70	18,90	26,00
Power consumption (EN14511)	kW	3,90	5,70	7,90
Coefficient of performance COP (EN14511)		3,50	3,30	3,30
<b>A30/W7</b>				
Cooling capacity (EN14511)	kW	15,20	-	-
Power consumption (EN14511)	kW	5,00	-	-
Energy efficiency ratio EER (EN14511)		3,00	-	-
<b>A35/W7</b>				
Cooling capacity (EN14825)	kW	-	18,10	27,30
Power consumption (EN14825)	kW	-	8,80	13,00
Energy efficiency ratio EER (EN14825)		-	2,10	2,10

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A++	A++	A+	A++	A++	A++
P rated	kW	16	16	22	21	29	29
Efficiency ETAs	%	171	133	148	125	150	134
SCOP		4,43	3,46	3,78	3,21	3,83	3,43



Outdoor unit standard configuration  
Total height: 1104 mm



Outdoor unit with snow cover  
Total height: 1260 mm



Outdoor unit with SSP and snow cover  
Total height: 1695 mm

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> For an air/water heat pump, an additional heat generator (e.g. electric immersion heater) is essential.



INCLUDED AS STANDARD		AIR 23 C12A		AIR 29 C12A		AIR 41 C12A			
Flow meter (WNA), internal		1 pce		1 pce		1 pce			
Circulation pump (WNA), internal		1 pce		1 pce		1 pce			
Safety valve (WNA), internal		1 pce		1 pce		1 pce			
Flexible hoses, internal		+		+		+			
OPTIONALLY AVAILABLE		AIR 23 C12A		AIR 29 C12A		AIR 41 C12A		Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display		+		+		+		980152	609,-
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+		+		+		980169	573,-
Electricity meter II		+		+		+		980188	351,-
Internal electric immersion heater (8.8 kW) <sup>2)</sup>		+		+		-		980190	128,-
3-way switching module, internal		+		+		+		980191	244,-
External electric immersion heater (6 kW) <sup>2)</sup>		-		+		-		922508	285,-
External electric immersion heater (9 kW) <sup>2)</sup>		+		-		+		922509	309,-
3-way switching module (DN 40), external		+		+		-		290341	362,-
3-way switching module (DN 50), external		-		-		+		290342	386,-
Indoor unit surface design		+		+		+		See page 19	
DHW tank/buffer tank		+		+		+		See page 81	
Connection line to outdoor unit		+		+		+		See page 44	
INDOOR UNIT		AIR 23 C12A		AIR 29 C12A		AIR 41 C12A			
Dimensions (HxWxD)	mm	1289x600x680		1289x600x680		1289x600x680			
Weight (excl. packaging)	kg	148		160		164			
Hydraulic assembly connection (dimension)	inch	1 1/2		1 1/2		2			
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50		3/~380-400/50		3/~380-400/50			
Fuse protection		1x C20A 3p		1x C25A 3p		1x C25A 3p			
Max. operating current	A	16,8		21,1		24,8			
Max. starting current	A	50,5		49,5		63,5			
Refrigerant		R407C		R407C		R407C			
Temperature differential (WNA)	K	5		5		5			
Flow rate (WNA)	m³/h	3,40		4,40		6,00			
Internal pressure differential (WNA), M2-1/M4-1	mbar	330		464		820			
Compressor type		Scroll		Scroll		Scroll			
OUTDOOR UNIT		AIR 23 C12A		AIR 29 C12A		AIR 41 C12A			
Unit type		VHS-M 19		VHS-M 25		VHS-M 35			
Dimensions (HxWxD)	mm	1104x2224x965		1104x2224x965		1104x2224x965			
Weight (excl. packaging)	kg	136		175		180			
Standard colour		Grey (RAL 7016)		Grey (RAL 7016)		Grey (RAL 7016)			
Operating mode		Nominal	Silent mode	Nominal	Silent mode	Nominal	Silent mode		
Sound pressure level (at 3 m)	dB(A)	36,5	34,5	44	40	47	42		
Sound power level (EN12102)	dB(A)	54	52	62	58	64	60		
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR 23 C12A		AIR 29 C12A		AIR 41 C12A		Order no.	Price €
Snow cover (grey, RAL 7016)		2 pce		2 pce		2 pce		915763	184,-
Super Silent Package (SSP), 3 dB(A) sound reduction		1 pce		1 pce		1 pce		290554	1.077,-
SSP snow cover (grey, RAL 7016)		2 pce		2 pce		2 pce		915732	288,-
Vertical casing for connection line (grey, RAL 7016)		1 pce		-		-		915616	112,-
Custom outdoor unit colour		+		+		+		See page 18	
Outdoor unit version for coastal installation		+		+		+		on request	
SERVICES								Order no.	Price €
Commissioning								See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- Please observe the machine-specific engineering and installation information, see Design section (AIR On/Off). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR M6

**AIR/WATER HEAT PUMP, SPLIT VERSION**  
INCL. HORIZONTAL SPLIT EVAPORATOR

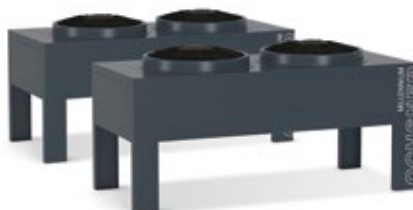


- M6 INDOOR UNIT
- HEATING OR HEATING/ COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AIR 80 C13A		AIR 80 C22A		
Order no.		288600		288610		
PRICE €		45.140,-		46.881,-		
Building heat load						
Suitable building heat load		kW	50 - 78		50 - 78	
A7/W35						
Heating output (EN14511)		kW	75,60		75,60	
Power consumption (EN14511)		kW	18,90		18,90	
Coefficient of performance COP (EN14511)		4,00		4,00		
A2/W35						
Heating output (EN14511)		kW	65,10		65,10	
Power consumption (EN14511)		kW	18,10		18,10	
Coefficient of performance COP (EN14511)		3,60		3,60		
A-7/W35						
Heating output (EN14511)		kW	47,30		47,30	
Power consumption (EN14511)		kW	16,30		16,30	
Coefficient of performance COP (EN14511)		2,90		2,90		
A2/W55						
Heating output (EN14825)		kW	58,62		58,62	
Power consumption (EN14825)		kW	22,66		22,66	
Coefficient of performance COP (EN14825)		2,59		2,59		
A30/W7						
Cooling capacity (EN14511)		kW	61,70		61,70	
Power consumption (EN14511)		kW	20,60		20,60	
Energy efficiency ratio EER (EN14511)		3,00		3,00		
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)						
at max. flow temperature (heating)		°C	35	55	35	55
Energy efficiency class (D to A+++)			A+	A+	A+	A+
P rated		kW	61	68	61	68
Efficiency ETAs		%	137	110	137	110
SCOP			3,58	2,90	3,58	2,90



Outdoor unit AIR 80 C13A  
Total height: 1277 mm



Outdoor units AIR 80 C22A  
Total height: 1104 mm

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> For an air/water heat pump, an additional heat generator (e.g. electric immersion heater) is essential.

INCLUDED AS STANDARD		AIR 80 C13A	AIR 80 C22A		
Flow meter (WNA), external		1 pce	1 pce		
Flexible hose (2" x 1000 mm with bend), external		2 pce	2 pce		
OPTIONALLY AVAILABLE		AIR 80 C13A	AIR 80 C22A	Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display		+	+	980152	609,-
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+	+	980169	573,-
Electricity meter III		+	+	980189	1.190,-
Circulation pump 65-1		+	+	922462	3.087,-
External electric immersion heater (6 kW) <sup>2)</sup>		+	+	922508	285,-
External electric immersion heater (9 kW) <sup>2)</sup>		+	+	922509	309,-
3-way switching module (DN 50), external		+	+	290342	386,-
DHW tank/buffer tank		+	+	See page 81	
Connection line to outdoor unit		+	+	See page 44	
INDOOR UNIT		AIR 80 C13A	AIR 80 C22A		
Dimensions (HxWxD)	mm	1889x680x698	1889x680x698		
Weight (excl. packaging)	kg	305	305		
Hydraulic assembly connection (dimension)	inch	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C80A 3p	1x C80A 3p		
Max. operating current	A	73,3	69,6		
Max. starting current	A	124	124		
Refrigerant		R410A	R410A		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	13,00	13,00		
Internal pressure differential (WNA)	mbar	312	312		
Residual head (WNA)	mbar	618	618		
Compressor type		Scroll	Scroll		
OUTDOOR UNIT		AIR 80 C13A	AIR 80 C22A		
Unit type		VHS 65 (1x)	VHS-M 80 (2x)		
Dimensions (HxWxD)	mm	1277x2965x1288 (1x)	1104x2224x965 (2x)		
Weight (excl. packaging)	kg	348 (1x)	180 (2x)		
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)		
Operating mode		Nominal Silent mode	Nominal Silent mode		
Sound pressure level (at 3 m)	dB(A)	60,5 57,5	46,5 42,5		
Sound power level (EN12102)	dB(A)	78 75	64 60		
OPTIONAL, OUTDOOR UNIT (PRICE/ UNIT)		AIR 80 C13A	AIR 80 C22A	Order no.	Price €
Snow cover (grey, RAL 7016)		-	4 pce	915763	184,-
Super Silent Package (SSP), 3 dB(A) sound reduction		-	2 pce	290676	1.077,-
SSP snow cover (grey, RAL 7016)		-	4 pce	915732	288,-
Outdoor unit version for coastal installation		+	+	on request	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- A forklift or crane is required for unloading the AIR 80 C13A heat pump outdoor unit.
- Please observe the machine-specific engineering and installation information, see Design section (AIR On/Off). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR HAWK

**INVERTER AIR/WATER HEAT PUMP**  
INCL. HORIZONTAL SPLIT EVAPORATOR



- M2/M4 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTS CONTROLLER
- VARIABLE SPEED COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AIR HAWK 208 C11A	AIR HAWK 208 C11B
Order no.		287300V	287301V
PRICE €		14.520,-	14.520,-
<b>Building heat load</b>			
Suitable building heat load	kW	4 - 8	4 - 8
<b>A7/W27</b>			
Heating output range	kW	2,0 - 9,0	2,0 - 9,0
Heating output (EN14825)	kW	2,13	2,13
Power consumption (EN14825)	kW	0,34	0,34
Coefficient of performance COP (EN14825)		6,38	6,38
<b>A7/W55</b>			
Heating output range	kW	2,0 - 8,0	2,0 - 8,0
Heating output (EN14511)	kW	3,98	3,98
Power consumption (EN14511)	kW	1,28	1,28
Coefficient of performance COP (EN14511)		3,10	3,10
<b>A2/W30</b>			
Heating output range	kW	2,0 - 8,0	2,0 - 8,0
Heating output (EN14825)	kW	3,22	3,22
Power consumption (EN14825)	kW	0,71	0,71
Coefficient of performance COP (EN14825)		4,53	4,53
<b>A-7/W34</b>			
Heating output range	kW	2,0 - 6,3	2,0 - 6,3
Heating output (EN14825)	kW	5,34	5,34
Power consumption (EN14825)	kW	1,97	1,97
Coefficient of performance COP (EN14825)		2,71	2,71
<b>A35/W18</b>			
Cooling capacity (EN14825)	kW	6,78	6,78
Power consumption (EN14825)	kW	1,77	1,77
Energy efficiency ratio EER (EN14825)		3,83	3,83

## ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A++	A+++	A++
P rated	kW	6	6	6	6
Efficiency ETAs	%	175	140	175	140
SCOP		4,46	3,56	4,46	3,56



AIR HAWK: Outdoor unit with snow cover  
Total height: 1261 mm

<sup>1)</sup> On indoor units with integral DHW tank (T200), observe the correct position of the shut-off ball valve relative to the DHW safety valve. See operating and installation manual.

<sup>2)</sup> The junction box connector set is required if the connection line set including cable harness is not ordered.



INCLUDED AS STANDARD		AIR HAWK 208 C11A	AIR HAWK 208 C11B		
Internal electric immersion heater (5.6 kW)		1 pce	1 pce		
Flow meter (WNA), internal		1 pce	1 pce		
3-way switching module (DHW heating), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce		
Snow cover for the outdoor unit		1 pce	1 pce		
Flexible hoses, internal		+	+		
OPTIONALLY AVAILABLE		AIR HAWK 208 C11A	AIR HAWK 208 C11B	Order no.	Price €
Heating/cooling for surface systems (flow 18/23°C), incl. hardwired room temperature and humidity sensor		+	+	980207	541,-
Hydraulic shut-off set (4x) <sup>1)</sup>		+	+	290538	197,-
3-way switching module (DN 32), external		+	+	290229	298,-
Indoor unit surface design		+	+	See page 19	
DHW tank/buffer tank		+	+	See page 81	
Connection line to outdoor unit		+	+	See page 44	
INDOOR UNIT		AIR HAWK 208 C11A	AIR HAWK 208 C11B		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	151	151		
Hydraulic assembly connection (dimension)	inch	1	1		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	1/~220-240/50		
Fuse protection		1x B16A 1p	1x B16A 1p		
Rated current	A	15	15		
Max. starting current	A	10	10		
Refrigerant		R513A	R513A		
Min. flow rate, heating (WNA)	m³/h	0,50	0,50		
Min. flow rate, cooling/defrost (WNA)	m³/h	0,85	0,85		
Min. flow rate, DHW (WNA)	m³/h	0,50	0,50		
Compressor type		Rotary piston	Rotary piston		
Sound pressure level (at 1 m)	dB(A)	35	35		
Sound power level (EN12102)	dB(A)	43	43		
OUTDOOR UNIT		AIR HAWK 208 C11A	AIR HAWK 208 C11B		
Dimensions (HxWxD)	mm	1261x1292x965	1261x1292x965		
Weight (excl. packaging)	kg	88	88		
Standard colour		White aluminium (RAL 9006)	White aluminium (RAL 9006)		
Operating mode		Nominal	Nominal		
Sound pressure level (at 3 m)	dB(A)	28	28		
Sound power level (EN12102)	dB(A)	45	45		
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR HAWK 208 C11A	AIR HAWK 208 C11B	Order no.	Price €
Junction box connector set <sup>2)</sup>		1 pce	1 pce	918384	49,-
Vertical casing for connection line (white aluminium, RAL 9006)		1 pce	1 pce	915911	112,-
Custom outdoor unit colour		+	+	See page 18	
Outdoor unit version for coastal installation		+	+	on request	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- Please observe the machine-specific engineering and installation information, see Design section (AIR inverter technology).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR FALCON

## INVERTER AIR/WATER HEAT PUMP

INCL. VERTICAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)



- M1 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 60°C
- OTS CONTROLLER
- VARIABLE SPEED COMPRESSOR
- DELIVERY CLASS II
- AVAILABLE IN Q1

UNIT TYPE		AIR FALCON 212 C11A	AIR FALCON 212 C11B
Order no.		287400V	287410V
PRICE €		8.915,-	8.915,-
<b>Building heat load</b>			
Suitable building heat load	kW	6 - 12	6 - 12
<b>A7/W27</b>			
Heating output range	kW	2,2 - 8,0	2,2 - 8,0
Heating output (EN14825)	kW	2,68	2,68
Power consumption (EN14825)	kW	0,44	0,44
Coefficient of performance COP (EN14825)		6,12	6,12
<b>A7/W55</b>			
Heating output range	kW	2,4 - 6,5	2,4 - 6,5
Heating output (EN14511)	kW	6,11	6,11
Power consumption (EN14511)	kW	2,17	2,17
Coefficient of performance COP (EN14511)		2,82	2,82
<b>A2/W30</b>			
Heating output range	kW	1,8 - 6,4	1,8 - 6,4
Heating output (EN14825)	kW	4,38	4,38
Power consumption (EN14825)	kW	1,08	1,08
Coefficient of performance COP (EN14825)		4,07	4,07
<b>A-7/W34</b>			
Heating output range	kW	2,9 - 6,5	2,9 - 6,5
Heating output (EN14825)	kW	7,06	7,06
Power consumption (EN14825)	kW	2,85	2,85
Coefficient of performance COP (EN14825)		2,48	2,48
<b>A35/W18</b>			
Cooling capacity (EN14825)	kW	7,41	7,41
Power consumption (EN14825)	kW	1,70	1,70
Energy efficiency ratio EER (EN14825)		4,37	4,37

### ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A++	A+	A++	A+
P rated	kW	9	8	9	8
Efficiency ETAs	%	164	120	164	120
SCOP		4,18	3,08	4,18	3,08



AIR FALCON: Outdoor unit  
Total height: 998 mm

<sup>1)</sup> On indoor units with integral DHW tank (T200), observe the correct position of the shut-off ball valve relative to the DHW safety valve. See operating and installation manual.

<sup>2)</sup> AIR FALCON 212 incl. tank SP 220 (920889)

<sup>3)</sup> AIR FALCON 212 incl. elec. terminal for DHW circulation pump (9290856) and tank SP 220 (920889)

<sup>4)</sup> AIR FALCON 212 incl. heating/cooling function (980207) and tank SP 220 (920889)

<sup>5)</sup> AIR FALCON 212 incl. heating/cooling function (980207), elec. terminal for DHW circulation pump (9290856) and tank SP 220 (920889)

INCLUDED AS STANDARD		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
Internal electric immersion heater (5.6 kW)		1 pce		1 pce	
Flow meter (WNA), internal		1 pce		1 pce	
3-way switching module (DHW heating), internal		1 pce		1 pce	
Circulation pump (WNA), internal		1 pce		1 pce	
Safety valve (WNA), internal		1 pce		1 pce	
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce		1 pce	
Bypass with ball valve		1 pce		1 pce	
OPTIONALLY AVAILABLE		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
				Order no.	Price €
Heating/cooling for surface systems (flow 18/23°C), incl. hardwired room temperature and humidity sensor		+		980207	541,-
Hydraulic shut-off set (4x) <sup>1)</sup>		+		290538	197,-
Elec. terminal for DHW circulation pump		+		9290856	41,-
DHW tank/buffer tank		+		See page 81	
Connection line to outdoor unit		+		See page 44	
INDOOR UNIT		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
Dimensions (HxWxD)	mm	1289x400x683		1289x400x683	
Weight (excl. packaging)	kg	101		101	
Hydraulic assembly connection (dimension)	inch	1		1	
Refrigerant		R32		R32	
Min. flow rate, heating (WNA)	m³/h	0,50		0,50	
Min. flow rate, cooling/defrost (WNA)	m³/h	0,85		0,85	
Min. flow rate, DHW (WNA)	m³/h	0,50		0,50	
OUTDOOR UNIT		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
Dimensions (HxWxD)	mm	998x940x384		998x940x384	
Weight (excl. packaging)	kg	73		73	
Standard colour		Grey (RAL 7016)		Grey (RAL 7016)	
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50		1/~220-240/50	
Fuse protection		1x B20A 3p		1x B25A 1p	
Rated current	A	20		25	
Max. starting current	A	9,8		17,4	
Compressor type		Rotary piston		Rotary piston	
Operating mode		Nominal	Silent mode	Nominal	Silent mode
Sound pressure level (at 3 m)	dB(A)	36,7	35	36,7	35
Sound power level (EN12102)	dB(A)	54	52	54	52
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
				Order no.	Price €
Bracket set for wall mounting		+		290906	261,-
Condensate drip tray incl. ribbon heater		+		290657	1.622,-
Anti-vibration base with floor bracket		+		912633	72,-
PACKAGES INCL. TANK SP 220				Order no.	Price €
AIR FALCON 212 C11A package SP 220 <sup>2)</sup>				180100	9.440,-
AIR FALCON 212 C11A package EAZP + SP 220 <sup>3)</sup>				180120	9.480,-
AIR FALCON 212 C11A package H/K + SP 220 <sup>4)</sup>				180110	9.965,-
AIR FALCON 212 C11A package H/K + EAZP + SP 220 <sup>5)</sup>				180130	10.005,-
AIR FALCON 212 C11B package SP 220 <sup>2)</sup>				180101	9.440,-
AIR FALCON 212 C11B package EAZP + SP 220 <sup>3)</sup>				180121	9.480,-
AIR FALCON 212 C11B package H/K + SP 220 <sup>4)</sup>				180111	9.965,-
AIR FALCON 212 C11B package H/K + EAZP + SP 220 <sup>5)</sup>				180131	10.005,-
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- Please observe the machine-specific engineering and installation information, see Design section (AIR inverter technology).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR FALCON MULTI TOWER

## INVERTER AIR/WATER HEAT PUMP

INCL. VERTICAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)



- MULTI TOWER
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 60°C
- OTS CONTROLLER
- VARIABLE SPEED COMPRESSOR
- DELIVERY CLASS II
- AVAILABLE FROM 2ND QUARTER

UNIT TYPE		AIR FALCON 212 C11A T200	AIR FALCON 212 C11B T200		
Order no.		286700	286710		
PRICE €		11.015,-	11.015,-		
Building heat load					
Suitable building heat load	kW	6 - 12	6 - 12		
A7/W27					
Heating output range	kW	2,2 - 8,0	2,2 - 8,0		
Heating output (EN14825)	kW	2,68	2,68		
Power consumption (EN14825)	kW	0,44	0,44		
Coefficient of performance COP (EN14825)		6,12	6,12		
A7/W55					
Heating output range	kW	2,4 - 6,5	2,4 - 6,5		
Heating output (EN14511)	kW	6,11	6,11		
Power consumption (EN14511)	kW	2,17	2,17		
Coefficient of performance COP (EN14511)		2,82	2,82		
A2/W30					
Heating output range	kW	1,8 - 6,4	1,8 - 6,4		
Heating output (EN14825)	kW	4,38	4,38		
Power consumption (EN14825)	kW	1,08	1,08		
Coefficient of performance COP (EN14825)		4,07	4,07		
A-7/W34					
Heating output range	kW	2,9 - 6,5	2,9 - 6,5		
Heating output (EN14825)	kW	7,06	7,06		
Power consumption (EN14825)	kW	2,85	2,85		
Coefficient of performance COP (EN14825)		2,48	2,48		
A35/W18					
Cooling capacity (EN14825)	kW	7,41	7,41		
Power consumption (EN14825)	kW	1,70	1,70		
Energy efficiency ratio EER (EN14825)		4,37	4,37		
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)					
at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A++	A+	A++	A+
P rated	kW	9	8	9	8
Efficiency ETAs	%	164	120	164	120
SCOP		4,18	3,08	4,18	3,08



AIR FALCON: Outdoor unit  
Total height: 998 mm

<sup>1)</sup> On indoor units with integral DHW tank (T200), observe the correct position of the shut-off ball valve relative to the DHW safety valve. See operating and installation manual.



INCLUDED AS STANDARD		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
Internal electric immersion heater (5.9 kW)		1 pce		1 pce	
Flow meter (WNA), internal		1 pce		1 pce	
3-way switching module (DHW heating), internal		1 pce		1 pce	
Circulation pump (WNA), internal		1 pce		1 pce	
Safety valve (WNA), internal		1 pce		1 pce	
OPTIONALLY AVAILABLE		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
				Order no.	Price €
Heating/cooling for surface systems (flow 18/23°C), incl. hardwired room temperature and humidity sensor		+		980207	541,-
Hydraulic shut-off set (4x) <sup>1)</sup>		+		290538	197,-
Elec. terminal for DHW circulation pump		+		9290856	41,-
Connection line to outdoor unit		+		See page 44	
INDOOR UNIT		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
Dimensions (HxWxD)	mm	1942x688x817		1942x688x817	
Tilt height	mm	2244		2244	
Weight (excl. packaging) / Filled weight	kg	203 / 471		203 / 471	
Hydraulic assembly connection (dimension)	inch	1		1	
Refrigerant		R32		R32	
Temperature differential (WNA)	K	5		5	
Flow rate (WNA)	m³/h	0,90		0,90	
Residual head (WNA)	mbar	500		500	
DHW TANK		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
Nominal capacity	l	168		168	
Tank material		Enamelled steel		Enamelled steel	
Draw-off rate	l/min	25		25	
Energy efficiency class		B		B	
BUFFER TANK		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
Nominal capacity	l	100		100	
Tank material		Steel		Steel	
OUTDOOR UNIT		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
Dimensions (HxWxD)	mm	998x940x384		998x940x384	
Weight (excl. packaging)	kg	73		73	
Standard colour		Grey (RAL 7016)		Grey (RAL 7016)	
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50		1/~220-240/50	
Fuse protection		1x B20A 3p		1x B25A 1p	
Rated current	A	20		25	
Max. starting current	A	9,8		17,4	
Compressor type		Rotary piston		Rotary piston	
Operating mode		Nominal	Silent mode	Nominal	Silent mode
Sound pressure level (at 3 m)	dB(A)	36,7	35	36,7	35
Sound power level (EN12102)	dB(A)	54	52	54	52
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
				Order no.	Price €
Bracket set for wall mounting		+		290906	261,-
Condensate drip tray incl. ribbon heater		+		290657	1.622,-
Anti-vibration base with floor bracket		+		912633	72,-
SERVICES		AIR FALCON 212 C11A T200		AIR FALCON 212 C11B T200	
				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Silent mode: This setting can be made with the controller.
- Please observe the machine-specific engineering and installation information, see Design section (AIR inverter technology).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR EAGLE

## INVERTER AIR/WATER HEAT PUMP

INCL. HORIZONTAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)

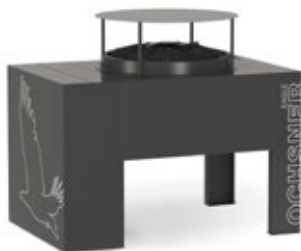


- GOLF INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- VARIABLE SPEED COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1
Order no.		285630	285640
PRICE €		17.187,-	19.445,-
<b>Building heat load</b>			
Suitable building heat load	kW	8 - 14	14 - 21
<b>A7/W35</b>			
Heating output range	kW	3,5 - 10,6	6,7 - 8,3
Heating output (EN14511)	kW	6,00	7,10
Power consumption (EN14511)	kW	1,30	1,50
Coefficient of performance COP (EN14511)		4,50	4,80
<b>A2/W35</b>			
Heating output range	kW	3,1 - 10,2	6,0 - 10,4
Heating output (EN14511)	kW	5,50	7,10
Power consumption (EN14511)	kW	1,40	1,70
Coefficient of performance COP (EN14511)		4,00	4,20
<b>A-7/W34</b>			
Heating output range	kW	2,6 - 8,6	5,2 - 14,1
Heating output (EN14511)	kW	7,80	12,80
Power consumption (EN14511)	kW	2,70	4,10
Coefficient of performance COP (EN14511)		2,90	3,10
<b>A7/W55</b>			
Heating output range	kW	3,9 - 11,0	6,6 - 8,6
Heating output (EN14511)	kW	6,40	8,60
Power consumption (EN14511)	kW	2,10	2,70
Coefficient of performance COP (EN14511)		3,10	3,30
<b>A35/W18</b>			
Cooling capacity range	kW	2,6 - 6,6	5,3 - 12,9
Cooling capacity (EN14825)	kW	5,60	7,50
Power consumption (EN14825)	kW	1,70	2,50
Energy efficiency ratio EER (EN14825)		3,30	3,30

### ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A++	A++	A++	A++
P rated	kW	10	10	17	17
Efficiency ETAs	%	158	129	171	138
SCOP		4,10	3,36	4,42	3,60



AIR EAGLE: Outdoor unit with snow cover

Total height: 1260 mm

<sup>1)</sup> On indoor units with integral DHW tank (T200), observe the correct position of the shut-off ball valve relative to the DHW safety valve. See operating and installation manual.

INCLUDED AS STANDARD		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1		
Internal electric immersion heater (8.8 kW)		1 pce	1 pce		
Flow meter (WNA), internal		1 pce	1 pce		
3-way switching module (DHW heating), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce		
Pressure gauge		1 pce	1 pce		
Bypass with ball valve		1 pce	1 pce		
Snow cover for the outdoor unit		1 pce	1 pce		
OPTIONALLY AVAILABLE		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1	Order no.	Price €
Heating/cooling incl. remote controller with graphic display		+	+	980170	309,-
Heating/cooling incl. remote controller with touchscreen (incl. web2com server)		+	+	980171	967,-
Hydraulic shut-off set (4x) <sup>1)</sup>		+	+	290538	197,-
DHW tank/buffer tank		+	+	See page 81	
Connection line to outdoor unit		+	+	See page 44	
INDOOR UNIT		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1		
Dimensions (HxWxD)	mm	1150x400x650	1150x400x650		
Weight (excl. packaging)	kg	75	75		
Hydraulic assembly connection (dimension)	inch	1	1		
Refrigerant		R410A	R410A		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	1,40	1,80		
Residual head (WNA)	mbar	590	380		
OUTDOOR UNIT		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1		
Dimensions (HxWxD)	mm	1261x1477x965	1261x1477x965		
Weight (excl. packaging)	kg	200	200		
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)		
Phases/nominal voltage/frequency	~V/Hz	1/~220-240/50	3/~380-400/50		
Fuse protection		1x C20A 1p	1x C16A 3p		
Max. operating current	A	20	16		
Max. starting current	A	10	10		
Compressor type		Scroll	Scroll		
Sound pressure level (at 3 m)	dB(A)	39,5	39,5		
Sound power level (EN12102)	dB(A)	57	57		
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1	Order no.	Price €
Anti-vibration package for flat roof installation		+	+	290698	164,-
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- 10 year warranty against rusting for outdoor unit enclosure
- Please observe the machine-specific engineering and installation information, see Design section (AIR inverter technology).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR STATION

## AIR/WATER HEAT PUMP FOR INDOOR INSTALLATION



- AIR STATION
- HEATING
- MAX. FLOW TEMP. 60°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE	OLWI 9	OLWI 13	OLWI 18
Order no.	282530	282580	282630
<b>PRICE €</b>	<b>14.690,-</b>	<b>15.215,-</b>	<b>15.530,-</b>

Building heat load				
Suitable building heat load	kW	7 - 11	11 - 15	15 - 21

A10/W35				
Heating output (EN14511)	kW	9,50	13,40	18,50
Power consumption (EN14511)	kW	2,10	2,90	4,20
Coefficient of performance COP (EN14511)		4,50	4,60	4,40

A7/W35				
Heating output (EN14511)	kW	8,90	12,90	16,60
Power consumption (EN14511)	kW	2,00	2,90	4,10
Coefficient of performance COP (EN14511)		4,40	4,40	4,00

A2/W35				
Heating output (EN14511)	kW	8,10	11,30	15,70
Power consumption (EN14511)	kW	2,10	3,00	4,30
Coefficient of performance COP (EN14511)		3,80	3,80	3,60

A-7/W35				
Heating output (EN14511)	kW	6,80	9,70	13,20
Power consumption (EN14511)	kW	2,10	3,00	4,20
Coefficient of performance COP (EN14511)		3,20	3,30	3,10

### ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A++	A+	A++	A+	A++	A+
P rated	kW	8	9	11	13	15	18
Efficiency ETAs	%	161	119	161	118	151	115
SCOP		4,17	3,12	4,17	3,10	3,93	3,03

<sup>1)</sup> A wall conduit version is included in the price of the heat pump. When ordering, specify the required wall conduit version. For technical details, see Design section (AIR STATION).



INCLUDED AS STANDARD		OLWI 9	OLWI 13	OLWI 18		
Evaporator, internal		1 pce	1 pce	1 pce		
Air duct set		1 pce	1 pce	1 pce		
Air intake and discharge grilles		1 pce	1 pce	1 pce		
Internal electric immersion heater (8.8 kW)		1 pce	1 pce	1 pce		
Flow meter (WNA), external		1 pce	1 pce	1 pce		
3-way switching module (DHW heating), internal		1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce		
OPTIONALLY AVAILABLE		OLWI 9	OLWI 13	OLWI 18	Order no.	Price €
Remote controller with touchscreen (incl. web2com server)		+	+	+	918255	914,-
3-way switching module (DN 32), external		+	+	+	290229	298,-
Condensate pump PK10		+	+	+	912814	230,-
LSWP 560 (heat-insulated air hose, 4 m)		+	+	+	9120074	442,-
Wall conduit AWG 560 H (horizontal, with weather grille) <sup>1)</sup>		+	+	+	912716	0,-
Wall conduit AWG 560 L (horizontal, for cellar shaft) <sup>1)</sup>		+	+	+	912812	0,-
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		OLWI 9	OLWI 13	OLWI 18		
Dimensions (HxWxD)	mm	1820x800x1240	1820x800x1240	1820x800x1240		
Weight (excl. packaging)	kg	295	305	310		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C16A 3p	1x C16A 3p	1x C16A 3p		
Max. operating current	A	5,1	8,6	12		
Max. starting current	A	24	26	30		
Refrigerant		R407C	R407C	R407C		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	1,55	2,12	2,64		
Internal pressure differential (WNA)	mbar	70	110	200		
Compressor type		Scroll	Scroll	Scroll		
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- Please observe the machine-specific engineering and installation information, see Design section (AIR On/Off). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AIR MULTI M4

## AIR/WATER HEAT PUMP, SPLIT VERSION CASCADE PACKAGES



- MASTER/SLAVE CASCADE
- M2/M4 INDOOR UNIT
- HEATING OR HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

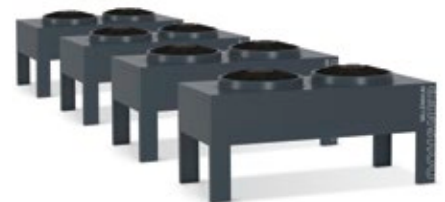
UNIT TYPE		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A
Order no.		290840	290841	290842
PRICE €		48.929,-	73.394,-	97.859,-
<b>A7/W35</b>				
Heating output (EN14511)	kW	37 - 74	37 - 111	37 - 148
Power consumption (EN14511)	kW	8,8 - 17,6	8,8 - 26,4	8,8 - 35,2
Coefficient of performance COP (EN14511)		4,2	4,2	4,2
<b>A2/W35</b>				
Heating output (EN14511)	kW	28 - 56	28 - 84	28 - 112
Power consumption (EN14511)	kW	8 - 16	8 - 24	8 - 32
Coefficient of performance COP (EN14511)		3,5	3,5	3,5
<b>A-7/W35</b>				
Heating output (EN14511)	kW	26 - 52	26 - 78	26 - 104
Power consumption (EN14511)	kW	7,9 - 15,8	7,9 - 23,7	7,9 - 31,6
Coefficient of performance COP (EN14511)		3,3	3,3	3,3
<b>A7/W55</b>				
Heating output (EN14511)	kW	34 - 68	34 - 102	34 - 136
Power consumption (EN14511)	kW	11,3 - 22,6	11,3 - 33,9	11,3 - 45,2
Coefficient of performance COP (EN14511)		3	3	3
<b>A35/W7</b>				
Cooling capacity (EN14825)	kW	27,3 - 54,6	27,3 - 81,9	27,3 - 109,2
Power consumption (EN14825)	kW	13 - 26	13 - 39	13 - 52
Energy efficiency ratio EER (EN14825)		2,1	2,1	2,1



AIR MULTI DUO  
Two outdoor units



AIR MULTI TRIO  
Three outdoor units



AIR MULTI QUATTRO  
Four outdoor units

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> For an air/water heat pump, an additional heat generator (e.g. electric immersion heater) is essential.

INCLUDED AS STANDARD		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A		
Flow meter (WNA), internal		2 pce	3 pce	4 pce		
Circulation pump (WNA), internal		2 pce	3 pce	4 pce		
Safety valve (WNA), internal		2 pce	3 pce	4 pce		
Flexible hoses, internal		+	+	+		
OPTIONALLY AVAILABLE (PRICE/UNIT)		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A	Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display		2 pce	3 pce	4 pce	980152	609,-
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		1 pce	1 pce	1 pce	980169	573,-
Electricity meter II		2 pce	3 pce	4 pce	980188	351,-
External electric immersion heater (9 kW) <sup>2)</sup>		+	+	+	922509	309,-
3-way switching module (DN 50), external		+	+	+	290342	386,-
Indoor unit surface design		+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	See page 81	
Connection line to outdoor unit		+	+	+	See page 44	
INDOOR UNIT		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A		
Dimensions (HxWxD)	mm	1289x1700x680	1289x2800x680	1289x3900x680		
Weight (excl. packaging)	kg	328	492	656		
Hydraulic assembly connection (dimension)	inch	2	2	2		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C25A 3p / 1x C25A 3p	1x C25A 3p / 1x C25A 3p / 1x C25A 3p	1x C25A 3p / 1x C25A 3p / 1x C25A 3p / 1x C25A 3p		
Max. operating current	A	24,8 / 24,8	24,8 / 24,8 / 24,8	24,8 / 24,8 / 24,8 / 24,8		
Max. starting current	A	63,5 / 63,5	63,5 / 63,5 / 63,5	63,5 / 63,5 / 63,5 / 63,5		
Refrigerant		R407C	R407C	R407C		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	6 - 12	6 - 18	6 - 24		
Internal pressure differential (WNA)	mbar	523 / 523	523 / 523 / 523	523 / 523 / 523 / 523		
Residual head (WNA)	mbar	406 / 406	406 / 406 / 406	406 / 406 / 406 / 406		
Compressor type		Scroll	Scroll	Scroll		
Number of compressors	pce	2	3	4		
OUTDOOR UNIT		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A		
Unit type		VHS-M 35 (2x)	VHS-M 35 (3x)	VHS-M 35 (4x)		
Dimensions (HxWxD)	mm	1104x2224x965 (2x)	1104x2224x965 (3x)	1104x2224x965 (4x)		
Weight (excl. packaging)	kg	180 (2x)	180 (3x)	180 (4x)		
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)	Grey (RAL 7016)		
Operating mode		Nominal Silent mode	Nominal Silent mode	Nominal Silent mode		
Sound pressure level (at 3 m)	dB(A)	46 43	48 45	50 47		
Sound power level (EN12102)	dB(A)	64 60	66 62	67 63		
OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A	Order no.	Price €
Snow cover (grey, RAL 7016)		4 pce	6 pce	8 pce	915763	184,-
Super Silent Package (SSP), 3 dB(A) sound reduction		2 pce	3 pce	4 pce	290554	1.077,-
SSP snow cover (grey, RAL 7016)		4 pce	6 pce	8 pce	915732	288,-
Outdoor unit version for coastal installation		+	+	+	on request	
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Maximum discharge output is equivalent to the P-design specification of the Ecodesign Directive and takes into account the heat pump output + electric immersion heater. According to the graphic „Ordered Annual Load Curve“ (see Design section), an electric immersion heater proportion of up to 3% can be assumed with appropriate sizing for average climate conditions.
- When using multiple electric immersion heaters, observe the maximum possible number per buffer tank.
- Silent mode: This setting can be made with the controller.
- 10 year warranty against rusting for outdoor unit enclosure
- Dimensions (HxWxD): The stated widths include the indoor units plus the minimum distance between them.
- Please observe the machine-specific engineering and installation information, see Design section (AIR MULTI). Hydraulic sizing specifications take into account OCHSNER accessories.

# CONNECTION LINE SETS

**A CONNECTION LINE SET FROM OCHSNER SIMPLIFIES LAYING THE CONNECTION LINE BETWEEN THE INDOOR AND THE OUTDOOR UNIT OF AN AIR/WATER HEAT PUMP.**

**A connection line set consists of:**

- Refrigeration pipes suitable for the heat pump
- Cable harness for connecting the outdoor unit to the indoor unit

## AIR M2/M4

**Cable harness version:**

- Inside the protective pipe for connecting the outdoor unit
- Labelled cable ends for simple connection
- The cable harness in the set is 5 m longer than the length specified in the connection line set.

### DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS

		5m		10 m		15 m		20 m	
	Delivery class	Order no.	Price €	Order no.	Price €	Order no.	Price €	Order no.	Price €
AIR 11	II	290743	542,-	290744	866,-	290745	1.263,-	290746	1.602,-
AIR 18	II	290747	558,-	290748	866,-	290749	1.662,-	290750	2.128,-
AIR 23	II	290751	558,-	290752	1.108,-	290753	1.662,-	290754	2.128,-
AIR 29	II	290755	686,-	290756	1.108,-	290757	1.836,-	290758	2.359,-
AIR 41	II	290759	961,-	290760	1.630,-	290761 <sup>1)</sup>	2.521,-		

## AIR EAGLE AND AIR FALCON

**Cable harness version:**

- Inside the protective pipe for connecting the outdoor unit
- Labelled cable ends for simple connection
- The cable harness in the set is 5 m longer than the length specified in the connection line set.
- Exception: a connection line set for 25 m includes a 25 m long cable harness

### DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS

		5m		10 m		15 m		20 m		25 m	
	Delivery class	Order no.	Price €	Order no.	Price €	Order no.	Price €	Order no.	Price €	Order no.	Price €
AIR EAGLE 414	II	290787	586,-	290788	982,-	290789	1.502,-	290790	1.936,-	290791	2.274,-
AIR EAGLE 717	II	290792	573,-	290793	983,-	290794	1.513,-	290795	1.941,-	290796	2.310,-
AIR FALCON 212 C11A	II	290914	282,-	290915	492,-	290916	702,-	290917	912,-		
AIR FALCON 212 C11B	II	290918	282,-	290919	492,-	290920	702,-	290921	912,-		

## AIR HAWK

**Cable harness version:**

- Inside the protective pipe for connecting the outdoor unit
- Incl. connectors with reverse polarity protection for straightforward connection to the outdoor unit
- The cable harness in the set is 5 m longer than the length specified in the connection line set.

### DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS

		5m		10 m		15 m		20 m	
	Delivery class	Order no.	Price €	Order no.	Price €	Order no.	Price €	Order no.	Price €
AIR HAWK 208	II	290797	429,-	290798	662,-	290799	894,-	290800	1.114,-

<sup>1)</sup> Only for 290761 (AIR 41): 16 m refrigeration pipe

<sup>2)</sup> For AIR 80 C22A, two cable harnesses are required in each case.



# CONNECTION LINES

## AIR M6: CONNECTION LINES AS BULK STOCK

### Refrigeration pipes:

The refrigeration pipes for the AIR M6 series air/water heat pumps are normally laid by OCHSNER customer service engineers.

### DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS

	Delivery class		Order no.	Price € (per m)
AIR 80 C13A AIR 80 C22A	II	3 - 16 m	990850	153,-

### Cable harness version:

- The protective pipe for connecting the outdoor unit (VHS-M evaporator)
- Labelled cable ends for simple connection

### CABLE HARNESSES FOR AIR M6 <sup>2)</sup>

Cable length	Delivery class	AIR 80 C13A	AIR 80 C22A	Order no.	Price € (per pce)
5m	II	1 pce.	2 pce.	929957	228,-
10 m	II	1 pce.	2 pce.	929958	301,-
15 m	I	1 pce.	2 pce.	929935	383,-
20 m	II	1 pce.	2 pce.	929959	468,-
25 m	I	1 pce.	2 pce.	929960	553,-

### Please note:

- If laying is to be carried out by the OCHSNER customer service department, preparations such as wall conduits, empty ducting, etc., must be made by the system installer according to OCHSNER guidelines. Laying by the OCHSNER customer service department is invoiced according to the actual work at the hourly customer service rate. Supplied connection lines cannot be returned and excess lengths also remain with the system installer.
- The max. connection line lengths specified in the Design section must be observed. Longer connection lines may be approved under certain conditions. For special approvals, OCHSNER requires an installation diagram giving specific lengths and height differentials.

OCHSNER TERRA

# BRINE/WATER HEAT PUMPS



## PRODUCT OVERVIEW

### SUITABLE FOR

Detached and two-family houses  
Apartment and commercial buildings  
Radiators up to 60°C  
Underfloor heating

### FUNCTION AND FEATURE

Heating  
Active cooling  
Passive cooling (with geothermal probes)  
Master/slave cascade possible

### DHW HEATING

DHW heating possible  
DHW heating possible > 60°C

### APPLIANCE POSITIONING

Indoor installation



**TERRA 6  
TERRA 8  
TERRA 11  
TERRA 14**

**TERRA 18  
TERRA 27**

**TERRA 40 HPLA  
TERRA 76 HPLA**

**TERRA 40 CPLA  
TERRA 76 CPLA**

■	■		
	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
			■
■	■	■	■
	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■

**Suitable building heat load in kW <sup>1)</sup>**

	2	4	6	8	10	12	14	16	18	-	24	26	28	30	-	34	-	40	-	52	-	62	64	-	78	See page
TERRA 6		■	■																							48
TERRA 8				■	■																					48
TERRA 11					■	■	■																			48
TERRA 14						■	■	■																		48
TERRA 18							■	■	■	■																52
TERRA 27								■	■	■	■	■	■													52
TERRA 40																■	■	■								54
TERRA 76																							■	■	■	54

#### TERRA MULTI: Cascade packages

For heating outputs up to 310 kW, cascade packages are available. See page: 58

■ Available

<sup>1)</sup> Guide values for product selection. A system-specific layout is required. The "Suitable building heat load" figures are guide values for systems in the "Average" climate zone (as per ErP Directive).

# OCHSNER TERRA M2

## BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M2/M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA				
Order no.		265010	265020	265030	265040				
PRICE €		8.609,-	9.050,-	10.152,-	11.255,-				
Building heat load									
Suitable building heat load	kW	4 - 6	6 - 8	8 - 11	11 - 14				
B0/W35									
Heating output (EN14511)	kW	5,80	7,50	10,30	13,20				
Power consumption (EN14511)	kW	1,21	1,55	2,05	2,74				
Coefficient of performance COP (EN14511)		4,81	4,84	5,03	4,82				
B0/W50									
Heating output (EN14511)	kW	5,30	6,80	9,30	12,10				
Power consumption (EN14511)	kW	1,70	2,30	3,10	3,90				
Coefficient of performance COP (EN14511)		3,10	3,00	3,00	3,10				
B0/W60									
Heating output (EN14511)	kW	5,00	6,20	8,80	11,80				
Power consumption (EN14511)	kW	2,00	2,50	3,70	4,40				
Coefficient of performance COP (EN14511)		2,50	2,50	2,40	2,70				
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)									
at max. flow temperature (heating)	°C	35	55	35	55	35	55		
Energy efficiency class (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P rated	kW	6	5	8	7	10	9	13	12
Efficiency ETAs	%	205	134	205	139	216	137	203	142
SCOP		5,33	3,55	5,33	3,68	5,60	3,63	5,28	3,75

<sup>1)</sup> If an internal 3-way switching module is selected as an accessory, control of an external auxiliary heat generator for DHW heating is not possible.

<sup>2)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>3)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)

<sup>4)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

<sup>5)</sup> For the scope of delivery of an ESK brine collector set, see Design section (TERRA).

INCLUDED AS STANDARD		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA		
Flow meter (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Flow meter (WQA), internal		1 pce	1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Circulation pump (WQA), internal		1 pce	1 pce	1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Safety valve (WQA), internal		1 pce	1 pce	1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WQA), internal		1 pce	1 pce	1 pce	1 pce		
Flexible hoses, internal		+	+	+	+		
OPTIONALLY AVAILABLE		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA	Order no.	Price €
Internal electric immersion heater (8.8 kW)		+	+	+	+	980201	128,-
Electricity meter I		+	+	+	+	980187	351,-
3-way switching module, internal <sup>1)</sup>		+	+	+	+	980202	244,-
3-way switching module (DN 32), external		+	+	+	+	290229	298,-
Passive cooling set 1 <sup>2)</sup>		+	+	+	-	290864	1.424,-
Passive cooling set 2 <sup>2)</sup>		-	-	-	+	290865	1.592,-
Frost protection function for monitoring heat source temperature		+	+	+	+	980200	98,-
Indoor unit surface design		+	+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	+	See page 81	
INDOOR UNIT		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	200	210	220	230		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Max. operating current	A	4,8	6,2	7,4	9,7		
Fuse protection		1x C16A 3p	1x C16A 3p	1x C16A 3p	1x C16A 3p		
Max. starting current	A	14	21,5	26	30		
Refrigerant		R410A	R410A	R410A	R410A		
Temperature differential (WQA)	K	3	3	3	3		
Flow rate (WQA)	m³/h	1,45	1,87	2,59	3,28		
Residual head (WQA)	mbar	589	579	505	421		
Temperature differential (WNA)	K	5	5	5	5		
Flow rate (WNA)	m³/h	1,00	1,29	1,77	2,27		
Internal pressure differential (WNA), M2-1/M4-1	mbar	113	264	279	414		
Compressor type		Scroll	Scroll	Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>3)</sup>		+	+	+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>4)</sup>		+	+	+	+	928137	227,-
ESK 3 brine collector set <sup>5)</sup>		+	-	-	-	290166	1.809,-
ESK 4 brine collector set <sup>5)</sup>		-	+	-	-	290167	2.242,-
ESK 6 brine collector set <sup>5)</sup>		-	-	+	-	290169	2.979,-
ESK 7 brine collector set <sup>5)</sup>		-	-	-	+	290170	3.480,-
Brine distributor		+	+	+	+	See page 95	
SERVICES						Order no.	Price €
Commissioning						See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (TERRA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).



# OCHSNER TERRA M2

## BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M2/M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB				
Order no.		265012	265022	265032	265042				
PRICE €		8.609,-	9.050,-	10.152,-	11.255,-				
Building heat load									
Suitable building heat load	kW	4 - 6	6 - 8	8 - 11	11 - 14				
B0/W35									
Heating output (EN14511)	kW	5,90	7,60	10,30	13,00				
Power consumption (EN14511)	kW	1,23	1,60	2,17	2,74				
Coefficient of performance COP (EN14511)		4,78	4,76	4,75	4,75				
B0/W50									
Heating output (EN14511)	kW	5,30	6,80	9,30	12,10				
Power consumption (EN14511)	kW	1,70	2,30	3,10	3,90				
Coefficient of performance COP (EN14511)		3,10	3,00	3,00	3,10				
B0/W60									
Heating output (EN14511)	kW	5,00	6,20	8,80	11,80				
Power consumption (EN14511)	kW	2,00	2,50	3,70	4,40				
Coefficient of performance COP (EN14511)		2,50	2,50	2,40	2,70				
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)									
at max. flow temperature (heating)	°C	35	55	35	55	35	55		
Energy efficiency class (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P rated	kW	6	5	8	7	10	9	13	12
Efficiency ETAs	%	201	137	204	131	200	136	199	138
SCOP		5,23	3,63	5,23	3,48	5,30	3,60	5,20	3,65

<sup>1)</sup> If an internal 3-way switching module is selected as an accessory, control of an external auxiliary heat generator for DHW heating is not possible.

<sup>2)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>3)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)

<sup>4)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

<sup>5)</sup> For the scope of delivery of an ESK brine collector set, see Design section (TERRA).

INCLUDED AS STANDARD	TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB
Flow meter (WNA), internal	1 pce	1 pce	1 pce	1 pce
Flow meter (WQA), internal	1 pce	1 pce	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce	1 pce	1 pce
Circulation pump (WQA), internal	1 pce	1 pce	1 pce	1 pce
Safety valve (WNA), internal	1 pce	1 pce	1 pce	1 pce
Safety valve (WQA), internal	1 pce	1 pce	1 pce	1 pce
Diaphragm expansion vessel, 24 litres, (WNA), internal	1 pce	1 pce	1 pce	1 pce
Diaphragm expansion vessel, 24 litres, (WQA), internal	1 pce	1 pce	1 pce	1 pce
Flexible hoses, internal	+	+	+	+

OPTIONALLY AVAILABLE	TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB	Order no.	Price €
Internal electric immersion heater (8.8 kW)	+	+	+	+	980201	128,-
3-way switching module, internal <sup>1)</sup>	+	+	+	+	980202	244,-
3-way switching module (DN 32), external	+	+	+	+	290229	298,-
Passive cooling set 1 <sup>2)</sup>	+	+	+	-	290864	1.424,-
Passive cooling set 2 <sup>2)</sup>	-	-	-	+	290865	1.592,-
Frost protection function for monitoring heat source temperature	+	+	+	+	980200	98,-
Indoor unit surface design	+	+	+	+	See page 19	
DHW tank/buffer tank	+	+	+	+	See page 81	

INDOOR UNIT		TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680	1289x600x680
Weight (excl. packaging)	kg	200	210	220	230
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~V/Hz	1/~220-240/50	1/~220-240/50	1/~220-240/50	1/~220-240/50
Max. operating current	A	12,8	17,1	22,8	27,9
Fuse protection		1x C16A 1p	1x C25A 1p	1x C25A 1p	1x C32A 1p
Max. starting current	A	30	41,5	54	65
Refrigerant		R410A	R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3	3
Flow rate (WQA)	m³/h	1,45	1,87	2,59	3,28
Residual head (WQA)	mbar	589	579	505	421
Temperature differential (WNA)	K	5	5	5	5
Flow rate (WNA)	m³/h	1,00	1,29	1,77	2,27
Internal pressure differential (WNA), M2-1/M4-1	mbar	113	264	279	414
Compressor type		Scroll	Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>3)</sup>	+	+	+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>4)</sup>	+	+	+	+	928137	227,-
ESK 3 brine collector set <sup>5)</sup>	+	-	-	-	290166	1.809,-
ESK 4 brine collector set <sup>5)</sup>	-	+	-	-	290167	2.242,-
ESK 6 brine collector set <sup>5)</sup>	-	-	+	-	290169	2.979,-
ESK 7 brine collector set <sup>5)</sup>	-	-	-	+	290170	3.480,-
Brine distributor	+	+	+	+	See page 95	

SERVICES	Order no.	Price €
Commissioning	See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (TERRA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER TERRA M4

## BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M2/M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		TERRA 18 HPLA		TERRA 27 HPLA		
Order no.		265050		265070		
PRICE €		12.137,-		15.215,-		
Building heat load						
Suitable building heat load		kW	14 - 18	18 - 27		
B0/W35						
Heating output (EN14511)		kW	17,00	24,45		
Power consumption (EN14511)		kW	3,75	5,56		
Coefficient of performance COP (EN14511)			4,53	4,40		
B0/W50						
Heating output (EN14511)		kW	16,10	23,40		
Power consumption (EN14511)		kW	5,10	7,40		
Coefficient of performance COP (EN14511)			3,20	3,20		
B0/W55						
Heating output (EN14511)		kW	15,80	22,59		
Power consumption (EN14511)		kW	5,47	7,95		
Coefficient of performance COP (EN14511)			2,89	2,84		
B0/W60						
Heating output (EN14511)		kW	15,40	22,20		
Power consumption (EN14511)		kW	5,90	9,30		
Coefficient of performance COP (EN14511)			2,60	2,40		
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)						
at max. flow temperature (heating)		°C	35	55	35	55
Energy efficiency class (D to A+++)			A+++	A++	A+++	A++
P rated		kW	17	16	25	23
Efficiency ETAs		%	189	134	181	133
SCOP			4,93	3,55	4,72	3,53

<sup>1)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>2)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)

<sup>3)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

<sup>4)</sup> For the scope of delivery of an ESK brine collector set, see Design section (TERRA).

INCLUDED AS STANDARD		TERRA 18 HPLA	TERRA 27 HPLA		
Flow meter (WNA), internal		1 pce	1 pce		
Flow meter (WQA), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Circulation pump (WQA), internal		1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce		
Safety valve (WQA), internal		1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WQA), internal		1 pce	1 pce		
Flexible hoses, internal		+	+		
OPTIONALLY AVAILABLE		TERRA 18 HPLA	TERRA 27 HPLA	Order no.	Price €
Electricity meter II		+	+	980188	351,-
Internal electric immersion heater (8.8 kW)		+	+	980195	128,-
3-way switching module, internal		+	+	980191	244,-
3-way switching module (DN 40), external		+	+	290341	362,-
Passive cooling set 3 <sup>1)</sup>		+	-	290866	1.663,-
Passive cooling set 4 <sup>1)</sup>		-	+	290867	2.641,-
Frost protection function for monitoring heat source temperature		+	+	980200	98,-
Indoor unit surface design		+	+	See page 18	
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		TERRA 18 HPLA	TERRA 27 HPLA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	230	250		
Hydraulic assembly connection (dimension)	inch	1 1/2	1 1/2		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	3/~380-400/50		
Max. operating current	A	13	21		
Fuse protection		1x C16A 3p	1x C25A 3p		
Max. starting current	A	37,5	62,5		
Refrigerant		R410A	R410A		
Temperature differential (WQA)	K	3	4		
Flow rate (WQA)	m³/h	4,15	-		
		-	4,75		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	2,92	4,42		
Internal pressure differential (WNA), M2-1/M4-1	mbar	358	549		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA 18 HPLA	TERRA 27 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>2)</sup>		+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>3)</sup>		+	+	928137	227,-
ESK 8 brine collector set <sup>4)</sup>		+	-	290171	4.006,-
ESK 14 brine collector set <sup>4)</sup>		-	+	290734	7.872,-
Brine distributor		+	+	See page 95	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (TERRA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER TERRA M6

## BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M6 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

UNIT TYPE		TERRA 40 HPLA	TERRA 76 HPLA
Order no.		221610	221630
PRICE €		22.731,-	28.340,-
<b>Building heat load</b>			
Suitable building heat load	kW	34 - 40	64 - 78
<b>B0/W35</b>			
Heating output (EN14511)	kW	40,40	77,50
Power consumption (EN14511)	kW	8,60	17,60
Coefficient of performance COP (EN14511)		4,70	4,40
<b>B0/W50</b>			
Heating output (EN14511)	kW	37,50	70,70
Power consumption (EN14511)	kW	11,10	22,10
Coefficient of performance COP (EN14511)		3,40	3,20
<b>B0/W60</b>			
Heating output (EN14511)	kW	35,50	66,70
Power consumption (EN14511)	kW	13,40	26,10
Coefficient of performance COP (EN14511)		2,60	2,60

### ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A++	A++	A++
P rated	kW	40	36	74	67
Efficiency ETAs	%	193	135	167	123
SCOP		5,09	3,65	4,46	3,36

<sup>1)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)

<sup>2)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

<sup>3)</sup> For the scope of delivery of an ESK brine collector set, see Design section (TERRA).



INCLUDED AS STANDARD		TERRA 40 HPLA	TERRA 76 HPLA		
Flow meter (WNA), external		1 pce	1 pce		
Flow meter (WQA), external		1 pce	1 pce		
Flexible hose (2" x 1000 mm with bend), external		4 pce	4 pce		
OPTIONALLY AVAILABLE		TERRA 40 HPLA	TERRA 76 HPLA	Order no.	Price €
Electricity meter III		+	+	980189	1.190,-
Circulation pump 40-1		+	-	922347	1.653,-
Circulation pump 65-1		-	+	922462	3.087,-
3-way switching module (DN 50), external		+	+	290342	386,-
Frost protection function for monitoring heat source temperature		+	+	980200	98,-
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		TERRA 40 HPLA	TERRA 76 HPLA		
Dimensions (HxWxD)	mm	1889x680x698	1889x680x698		
Weight (excl. packaging)	kg	228	306		
Hydraulic assembly connection (dimension)	inch	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C40A 3p	1x C80A 3p		
Max. operating current	A	31	64		
Max. starting current	A	79	124		
Refrigerant		R410A	R410A		
Temperature differential (WQA)	K	3	3		
Flow rate (WQA)	m³/h	9,99	18,82		
Internal pressure differential (WQA)	mbar	90	150		
Residual head (WQA)	mbar	757	544		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	6,90	13,30		
Internal pressure differential (WNA)	mbar	40	50		
Residual head (WNA)	mbar	650	748		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA 40 HPLA	TERRA 76 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>1)</sup>		+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>2)</sup>		+	+	928137	227,-
ESKP 18 brine collector set <sup>3)</sup>		+	-	290508	10.628,-
Circulation pump 40-2		+	-	922348	2.361,-
Circulation pump 65-1		-	+	922462	3.087,-
Brine distributor		+	+	See page 95	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (TERRA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER TERRA M6

## BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M6 INDOOR UNIT
- HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

UNIT TYPE		TERRA 40 CPLA		TERRA 76 CPLA		
Order no.		221618		221638		
PRICE €		28.128,-		34.640,-		
Building heat load						
Suitable building heat load		kW	34 - 40	64 - 78		
B0/W35						
Heating output (EN14511)		kW	40,40	77,50		
Power consumption (EN14511)		kW	8,60	17,60		
Coefficient of performance COP (EN14511)			4,70	4,40		
B0/W50						
Heating output (EN14511)		kW	37,50	70,70		
Power consumption (EN14511)		kW	11,10	22,10		
Coefficient of performance COP (EN14511)			3,40	3,20		
B0/W60						
Heating output (EN14511)		kW	35,50	66,70		
Power consumption (EN14511)		kW	13,40	26,10		
Coefficient of performance COP (EN14511)			2,60	2,60		
B25/W18						
Cooling capacity (EN14511)		kW	55,40	107,90		
Power consumption (EN14511)		kW	9,20	19,30		
Energy efficiency ratio EER (EN14511)			6,00	5,60		
B25/W7						
Cooling capacity (EN14511)		kW	34,90	61,50		
Power consumption (EN14511)		kW	8,30	14,20		
Energy efficiency ratio EER (EN14511)			4,20	4,30		
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)						
at max. flow temperature (heating)		°C	35	55	35	55
Energy efficiency class (D to A+++)			A+++	A++	A++	A++
P rated		kW	40	36	74	67
Efficiency ETAs		%	193	135	167	123
SCOP			5,09	3,65	4,46	3,36

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)

<sup>3)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

<sup>4)</sup> For the scope of delivery of an ESK brine collector set, see Design section (TERRA).

INCLUDED AS STANDARD		TERRA 40 CPLA	TERRA 76 CPLA		
Remote controller FB 6104 RH with graphic display and humidity sensor, white		1 pce	1 pce		
Flow meter (WNA), external		1 pce	1 pce		
Flow meter (WQA), external		1 pce	1 pce		
Flexible hose (2" x 1000 mm with bend), external		4 pce	4 pce		
OPTIONALLY AVAILABLE		TERRA 40 CPLA	TERRA 76 CPLA	Order no.	Price €
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+	+	980169	573,-
Electricity meter III		+	+	980189	1.190,-
Circulation pump 40-1		+	-	922347	1.653,-
Circulation pump 65-1		-	+	922462	3.087,-
3-way switching module (DN 50), external		+	+	290342	386,-
Frost protection function for monitoring heat source temperature		+	+	980200	98,-
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		TERRA 40 CPLA	TERRA 76 CPLA		
Dimensions (HxWxD)	mm	1889x680x698	1889x680x698		
Weight (excl. packaging)	kg	228	306		
Hydraulic assembly connection (dimension)	inch	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C40A 3p	1x C80A 3p		
Max. operating current	A	31	64		
Max. starting current	A	79	124		
Refrigerant		R410A	R410A		
Temperature differential (WQA)	K	3	3		
Flow rate (WQA)	m³/h	9,99	18,82		
Internal pressure differential (WQA)	mbar	90	150		
Residual head (WQA)	mbar	757	544		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	6,90	13,30		
Internal pressure differential (WNA)	mbar	40	50		
Residual head (WNA)	mbar	650	748		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA 40 CPLA	TERRA 76 CPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>2)</sup>		+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>3)</sup>		+	+	928137	227,-
ESKP 18 brine collector set <sup>4)</sup>		+	-	290508	10.628,-
Circulation pump 40-2		+	-	922348	2.361,-
Circulation pump 65-1		-	+	922462	3.087,-
Brine distributor		+	+	See page 95	
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (TERRA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER TERRA MULTI M6

**BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)**  
CASCADE PACKAGES



UNIT TYPE		TERRA MULTI DUO 152 HPLA	TERRA MULTI TRIO 228 HPLA	TERRA MULTI QUATTRO 304 HPLA
Order no.		290846	290849	290852
PRICE €		51.029,-	76.544,-	102.059,-
B0/W35				
Heating output (EN14511)	kW	77,5 - 155	77,5 - 232,5	77,5 - 310
Power consumption (EN14511)	kW	17,6 - 35,2	17,6 - 52,8	17,6 - 70,4
Coefficient of performance COP (EN14511)		4,4	4,4	4,4
B0/W50				
Heating output (EN14511)	kW	70,7 - 141,4	70,7 - 212,1	70,7 - 282,8
Power consumption (EN14511)	kW	22,1 - 44,2	22,1 - 66,3	22,1 - 88,4
Coefficient of performance COP (EN14511)		3,2	3,2	3,2
B0/W60				
Heating output (EN14511)	kW	66,7 - 133,4	66,7 - 200,1	66,7 - 266,8
Power consumption (EN14511)	kW	26,1 - 52,2	26,1 - 78,3	26,1 - 104,4
Coefficient of performance COP (EN14511)		2,6	2,6	2,6



- MASTER/SLAVE CASCADE
- M6 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

<sup>1)</sup> Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)  
<sup>2)</sup> Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C

INCLUDED AS STANDARD		TERRA MULTI DUO 152 HPLA	TERRA MULTI TRIO 228 HPLA	TERRA MULTI QUATTRO 304 HPLA		
Flow meter (WNA), external		2 pce	3 pce	4 pce		
Flow meter (WQA), external		2 pce	3 pce	4 pce		
Flexible hose (2" x 1000 mm with bend), external		8 pce	12 pce	16 pce		
OPTIONALLY AVAILABLE (PRICE/UNIT)		TERRA MULTI DUO 152 HPLA	TERRA MULTI TRIO 228 HPLA	TERRA MULTI QUATTRO 304 HPLA	Order no.	Price €
Electricity meter III		2 pce	3 pce	4 pce	980189	1.190,-
Circulation pump 65-1		2 pce	3 pce	4 pce	922462	3.087,-
Frost protection function for monitoring heat source temperature		2 pce	3 pce	4 pce	980200	98,-
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		TERRA MULTI DUO 152 HPLA	TERRA MULTI TRIO 228 HPLA	TERRA MULTI QUATTRO 304 HPLA		
Dimensions (HxWxD)	mm	1889x2160x698	1889x3640x698	1889x5120x698		
Weight (excl. packaging)	kg	612	918	1224		
Hydraulic assembly connection (dimension)	inch	2	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C80A 3p / 1x C80A 3p	1x C80A 3p / 1x C80A 3p / 1x C80A 3p	1x C80A 3p / 1x C80A 3p / 1x C80A 3p		
Max. operating current	A	64 / 64	64 / 64 / 64	64 / 64 / 64 / 64		
Max. starting current	A	124 / 124	124 / 124 / 124	124 / 124 / 124 / 124		
Refrigerant		R410A	R410A	R410A		
Temperature differential (WQA)	K	3	3	3		
Flow rate (WQA)	m³/h	18,82 - 37,64	18,82 - 56,46	18,82 - 75,28		
Internal pressure differential (WQA)	mbar	150 / 150	150 / 150 / 150	150 / 150 / 150 / 150		
Residual head (WQA)	mbar	544 / 544	544 / 544 / 544	544 / 544 / 544 / 544		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	13,3 - 26,6	13,3 - 39,9	13,3 - 53,2		
Internal pressure differential (WNA)	mbar	50 / 50	50 / 50 / 50	50 / 50 / 50 / 50		
Residual head (WNA)	mbar	748 / 748	748 / 748 / 748	748 / 748 / 748 / 748		
Compressor type		Scroll	Scroll	Scroll		
Number of compressors	pce	2	3	4		
OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)		TERRA MULTI DUO 152 HPLA	TERRA MULTI TRIO 228 HPLA	TERRA MULTI QUATTRO 304 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) <sup>1)</sup>		+	+	+	928153	133,-
Antifreeze concentrate O-Cool-Pro (25 kg) <sup>2)</sup>		+	+	+	928137	227,-
Circulation pump 65-1		2 pce	3 pce	4 pce	922462	3.087,-
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Dimensions (HxWxD): The stated widths include the indoor units plus the minimum distance between them.
- Please observe the machine-specific engineering and installation information, see Design section (TERRA MULTI). Hydraulic sizing specifications take into account OCHSNER accessories.



OCHSNER TERRA DX

# DIRECT EVAPORATION/WATER HEAT PUMPS



# PRODUCT OVERVIEW



**TERRA DX 5  
TERRA DX 8  
TERRA DX 11  
TERRA DX 13**

**TERRA DX 15  
TERRA DX 18**

## SUITABLE FOR

Detached and two-family houses	■	■
Apartment and commercial buildings		■
Radiators up to 60°C	■	■
Underfloor heating	■	■

## FUNCTION AND FEATURE

Heating	■	■
Master/slave cascade possible		■

## DHW HEATING

DHW heating possible	■	■
DHW heating possible > 60°C	■	■

## APPLIANCE POSITIONING

Indoor installation	■	■
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## Suitable building heat load in kW <sup>1)</sup>

	2	4	6	8	10	12	14	16	18	20	See page
TERRA DX 5		■	■								62
TERRA DX 8			■	■	■						62
TERRA DX 11				■	■	■					62
TERRA DX 13						■	■				62
TERRA DX 15								■	■		64
TERRA DX 18									■	■	64

■ Available

<sup>1)</sup> Guide values for product selection. A system-specific layout is required. The "Suitable building heat load" figures are guide values for systems in the "Average" climate zone (as per ErP Directive).

# OCHSNER TERRA DX M2

## DIRECT EVAPORATION/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M2/M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA				
Order no.		277010	277020	277030	277040				
PRICE €		7.590,-	8.714,-	9.375,-	10.352,-				
Building heat load									
Suitable building heat load	kW	4 - 6	6 - 9	9 - 12	12 - 14				
G4/W35									
Heating output (EN14511)	kW	6,20	8,60	12,10	14,20				
Power consumption (EN14511)	kW	1,30	1,70	2,35	2,80				
Coefficient of performance COP (EN14511)		4,80	5,10	5,10	5,10				
G-1/W35									
Heating output (EN14511)	kW	5,20	6,80	10,10	11,30				
Power consumption (EN14511)	kW	1,30	1,70	2,25	2,70				
Coefficient of performance COP (EN14511)		4,10	4,20	4,60	4,40				
G0/W50									
Heating output (EN14511)	kW	4,90	6,20	9,00	10,30				
Power consumption (EN14511)	kW	1,70	2,10	3,00	3,30				
Coefficient of performance COP (EN14511)		2,90	3,00	3,00	3,10				
G0/W60									
Heating output (EN14511)	kW	4,70	6,00	8,90	10,20				
Power consumption (EN14511)	kW	2,20	2,70	3,80	4,10				
Coefficient of performance COP (EN14511)		2,10	2,20	2,30	2,50				
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)									
at max. flow temperature (heating)	°C	35	55	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P rated	kW	6	6	9	7	12	11	14	12
Efficiency ETAs	%	194	128	205	138	213	140	206	144
SCOP		5,13	3,47	5,41	3,10	5,59	3,78	5,42	3,88

<sup>1)</sup> If an internal 3-way switching module is selected as an accessory, control of an external auxiliary heat generator for DHW heating is not possible.

<sup>2)</sup> Each incl. nitrogen charge with leakage indicator. For the recommended quantity, see Design section (TERRA DX).



INCLUDED AS STANDARD		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA		
Flow meter (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Diaphragm expansion vessel, 24 litres, (WNA), internal		1 pce	1 pce	1 pce	1 pce		
Flexible hoses, internal		+	+	+	+		
OPTIONALLY AVAILABLE		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA	Order no.	Price €
Electricity meter I		+	+	+	+	980187	351,-
Internal electric immersion heater (8.8 kW)		+	+	+	+	980204	128,-
3-way switching module, internal <sup>1)</sup>		+	+	+	+	980205	244,-
3-way switching module (DN 32), external		+	+	+	+	290229	298,-
Indoor unit surface design		+	+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	+	See page 81	
INDOOR UNIT		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	185	190	190	200		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C10A 3p	1x C10A 3p	1x C10A 3p	1x C10A 3p		
Max. operating current	A	4	6	8	9		
Max. starting current	A	13,5	18,5	20,5	27,5		
Refrigerant		R407C	R407C	R407C	R407C		
Temperature differential (WNA)	K	5	5	5	5		
Flow rate (WNA)	m³/h	1,07	1,48	2,20	2,44		
Internal pressure differential (WNA), M2-1/M4-1	mbar	197	264	324	577		
Compressor type		Scroll	Scroll	Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA	Order no.	Price €
Copper geothermal collector O-Tube Pro (75 m) <sup>2)</sup>		+	+	+	+	913209	418,-
Warning band roll (250 m)		+	+	+	+	916363	24,-
SERVICES						Order no.	Price €
Commissioning						See page 145	
5 m connection line (for systems with collection shaft)		Order no.		Price €			
Connection line set TERRA DX 5 (5 m)		290763		201,-			
Connection line set TERRA DX 8 (5 m)		290767		215,-			
Connection line set TERRA DX 11 (5 m)		290771		256,-			
Connection line set TERRA DX 13 (5 m)		290775		357,-			
10 m connection line (for systems with collection shaft)		Order no.		Price €			
Connection line set TERRA DX 5 (10 m)		290764		377,-			
Connection line set TERRA DX 8 (10 m)		290768		405,-			
Connection line set TERRA DX 11 (10 m)		290772		483,-			
Connection line set TERRA DX 13 (10 m)		290776		676,-			
15 m connection line (for systems with collection shaft)		Order no.		Price €			
Connection line set TERRA DX 5 (15 m)		290765		748,-			
Connection line set TERRA DX 8 (15 m)		290769		795,-			
Connection line set TERRA DX 11 (15 m)		290773		795,-			
Connection line set TERRA DX 13 (15 m)		290777		1.113,-			
20 m connection line (for systems with collection shaft)		Order no.		Price €			
Connection line set TERRA DX 5 (20 m)		290766		988,-			
Connection line set TERRA DX 8 (20 m)		290770		1.051,-			
Connection line set TERRA DX 11 (20 m)		290774		1.051,-			
Connection line set TERRA DX 13 (20 m)		290778		1.471,-			

**Notes:**

- Connection lines: The price does not include laying. Supplied connection lines cannot be returned and excess lengths also remain with the system installer.
- Please observe the machine-specific engineering and installation information, see Design section (TERRA DX). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER TERRA DX M4

## DIRECT EVAPORATION/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M2/M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE	TERRA DX 15 HCUA		TERRA DX 18 HCUA		
Order no.		277050		277060	
PRICE €		11.360,-		12.905,-	
Building heat load					
Suitable building heat load	kW	14 - 16		16 - 20	
G4/W35					
Heating output (EN14511)	kW	16,00		20,80	
Power consumption (EN14511)	kW	3,15		4,00	
Coefficient of performance COP (EN14511)		5,10		5,20	
G-1/W35					
Heating output (EN14511)	kW	14,00		16,30	
Power consumption (EN14511)	kW	3,15		3,90	
Coefficient of performance COP (EN14511)		4,40		4,40	
G0/W50					
Heating output (EN14511)	kW	13,10		15,40	
Power consumption (EN14511)	kW	4,10		4,80	
Coefficient of performance COP (EN14511)		3,20		3,20	
G0/W60					
Heating output (EN14511)	kW	12,80		15,10	
Power consumption (EN14511)	kW	5,10		6,20	
Coefficient of performance COP (EN14511)		2,50		2,40	
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)					
at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A++	A+++	A+++
P rated	kW	16	15	21	18
Efficiency ETAs	%	208	144	213	149
SCOP		5,49	3,89	5,60	4,00

<sup>1)</sup> Each incl. nitrogen charge with leakage indicator. For the recommended quantity, see Design section (TERRA DX).

INCLUDED AS STANDARD		TERRA DX 15 HCUA	TERRA DX 18 HCUA		
Flow meter (WNA), internal		1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce		
Flexible hoses, internal		+	+		
OPTIONALLY AVAILABLE		TERRA DX 15 HCUA	TERRA DX 18 HCUA	Order no.	Price €
Electricity meter II		+	+	980188	351,-
Internal electric immersion heater (8.8 kW)		+	+	980195	128,-
3-way switching module, internal		+	+	980191	244,-
3-way switching module (DN 40), external		+	+	290341	362,-
Indoor unit surface design		+	+	See page 19	
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		TERRA DX 15 HCUA	TERRA DX 18 HCUA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	210	210		
Hydraulic assembly connection (dimension)	inch	1 1/2	1 1/2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C13A 3p	1x C16A 3p		
Max. operating current	A	11	12		
Max. starting current	A	33,5	35		
Refrigerant		R407C	R407C		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	2,75	3,57		
Internal pressure differential (WNA), M2-1/M4-1	mbar	382	534		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		TERRA DX 15 HCUA	TERRA DX 18 HCUA	Order no.	Price €
Copper geothermal collector O-Tube Pro (75 m) <sup>1)</sup>		+	+	913209	418,-
Warning band roll (250 m)		+	+	916363	24,-
SERVICES				Order no.	Price €
Commissioning				See page 145	
5 m connection line (for systems with collection shaft)		Order no.	Price €		
Connection line set TERRA DX 15 (5 m)		290779	357,-		
Connection line set TERRA DX 18 (5 m)		290783	384,-		
10 m connection line (for systems with collection shaft)		Order no.	Price €		
Connection line set TERRA DX 15 (10 m)		290780	676,-		
Connection line set TERRA DX 18 (10 m)		290784	725,-		
15 m connection line (for systems with collection shaft)		Order no.	Price €		
Connection line set TERRA DX 15 (15 m)		290781	1.194,-		
Connection line set TERRA DX 18 (15 m)		290785	1.194,-		
20 m connection line (for systems with collection shaft)		Order no.	Price €		
Connection line set TERRA DX 15 (20 m)		290782	1.577,-		
Connection line set TERRA DX 18 (20 m)		290786	1.577,-		

**Notes:**

- Connection lines: The price does not include laying. Supplied connection lines cannot be returned and excess lengths also remain with the system installer.
- Please observe the machine-specific engineering and installation information, see Design section (TERRA DX). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).



OCHSNER AQUA

# WATER/WATER HEAT PUMPS



## PRODUCT OVERVIEW

### SUITABLE FOR

Detached and two-family houses

Apartment and commercial buildings

Radiators up to 60°C

Underfloor heating

### FUNCTION AND FEATURE

Heating

Active cooling

Passive cooling

Master/slave cascade possible

### DHW HEATING

DHW heating possible

DHW heating possible > 60°C

### APPLIANCE POSITIONING

Indoor installation





**AQUA 7  
AQUA 11  
AQUA 14**

**AQUA 17  
AQUA 22  
AQUA 36**

**AQUA 54 HPLA  
AQUA 97 HPLA**

**AQUA 54 CPLA  
AQUA 97 CPLA**

■	■		
	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
			■
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■

**Suitable building heat load in kW <sup>1)</sup>**

	2	4	6	8	10	12	14	16	18	20	22	-	28	-	36	-	46	-	54	-	70	-	85	-	100	See page
AQUA 7			■																							68
AQUA 11				■	■																					68
AQUA 14					■	■																				68
AQUA 17						■	■	■																		72
AQUA 22							■	■	■	■																72
AQUA 36									■	■	■			■	■											72
AQUA 54																	■	■	■							74
AQUA 97																								■	■	74

#### AQUA MULTI: Cascade packages

For heating outputs up to 395 kW, cascade packages are available. See page: 78

■ Available

<sup>1)</sup> Guide values for product selection. A system-specific layout is required. The "Suitable building heat load" figures are guide values for systems in the "Average" climate zone (as per ErP Directive).

# OCHSNER AQUA M4

## WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA			
Order no.		255010V	255020V	255030V			
PRICE €		9.690,-	10.971,-	12.378,-			
Building heat load							
Suitable building heat load	kW	6 - 7	7 - 10	10 - 12			
W10/W35							
Heating output (EN14511)	kW	6,90	10,00	12,30			
Power consumption (EN14511)	kW	1,30	1,70	2,10			
Coefficient of performance COP (EN14511)		5,20	5,70	5,80			
W10/W50							
Heating output (EN14511)	kW	6,40	8,30	11,60			
Power consumption (EN14511)	kW	1,84	2,30	3,00			
Coefficient of performance COP (EN14511)		3,50	3,60	3,90			
W10/W60							
Heating output (EN14511)	kW	6,20	7,90	10,90			
Power consumption (EN14511)	kW	2,30	2,90	3,70			
Coefficient of performance COP (EN14511)		2,70	2,70	2,90			
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)							
at max. flow temperature (heating)	°C	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P rated	kW	7	6	10	8	12	11
Efficiency ETAs	%	216	150	247	150	246	158
SCOP		5,59	3,96	6,44	4,03	6,43	4,24

<sup>1)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>2)</sup> Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps. Depending on required delivery head, see Design section (AQUA).

<sup>3)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA		
Flow meter (WNA), internal		1 pce	1 pce	1 pce		
Flow meter (WQA), internal		1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce	1 pce		
Shell and tube heat exchanger (WQA)		+	+	+		
Flexible hoses, internal		+	+	+		
OPTIONALLY AVAILABLE		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA	Order no.	Price €
Electricity meter I		+	+	+	991564	351,-
Internal electric immersion heater (8.8 kW)		+	+	+	991568	128,-
3-way switching module, internal		+	+	+	991569	244,-
3-way switching module (DN 32), external		+	+	+	290229	298,-
Service valves with flushing nozzle (2 pce, DN 32)		+	+	+	920654	280,-
Passive cooling set 1 <sup>1)</sup>		+	+	+	290864	1.424,-
Indoor unit surface design		+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	160	180	185		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C6A 3p	1x C10A 3p	1x C10A 3p		
Rated current	A	5	6,3	8		
Max. starting current	A	14,0	21,5	26,0		
Refrigerant		R410A	R410A	R410A		
Evaporator type (WQA)		Shell and tube heat exchanger	Shell and tube heat exchanger	Shell and tube heat exchanger		
Evaporator material (WQA)		Pipes 1.4404 / outer casing 1.4307	Pipes 1.4404 / outer casing 1.4307	Pipes 1.4404 / outer casing 1.4307		
Temperature differential (WQA)	K	4	4	4		
Flow rate (WQA)	m³/h	1,20	1,80	2,20		
Internal pressure differential (WQA)	mbar	36	72	125		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	1,19	1,72	2,12		
Internal pressure differential (WNA), M2-4/M4-4	mbar	55	84	100		
Compressor type		Scroll	Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA	Order no.	Price €
Submersible pump I, speed controlled <sup>2)</sup>		+	+	+	290605	1.290,-
Submersible pump II, speed controlled <sup>2)</sup>		+	+	+	290606	1.806,-
Cooling enclosure for submersible pumps (I and II)		+	+	+	290607	336,-
Filter for heat source I		+	+	+	922484	142,-
Centrifugal filter for larger quantities of impurities I <sup>3)</sup>		+	+	+	922234	1.982,-
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AQUA M4

## WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II
- AVAILABLE FROM 3RD QUARTER

UNIT TYPE		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB			
Order no.		255022V	255032V	255042V			
PRICE €		10.971,-	12.378,-	13.449,-			
Building heat load							
Suitable building heat load	kW	7 - 10	10 - 12	12 - 17			
W10/W35							
Heating output (EN14511)	kW	10,00	12,30	16,60			
Power consumption (EN14511)	kW	1,70	2,10	2,80			
Coefficient of performance COP (EN14511)		5,70	5,80	5,90			
W10/W50							
Heating output (EN14511)	kW	8,30	11,60	14,80			
Power consumption (EN14511)	kW	2,30	3,00	3,80			
Coefficient of performance COP (EN14511)		3,60	3,90	3,90			
W10/W60							
Heating output (EN14511)	kW	7,90	10,90	13,80			
Power consumption (EN14511)	kW	2,90	3,70	4,80			
Coefficient of performance COP (EN14511)		2,70	2,90	2,90			
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)							
at max. flow temperature (heating)	°C	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P rated	kW	10	8	12	11	17	14
Efficiency ETAs	%	247	150	246	158	250	159
SCOP		6,44	4,03	6,43	4,24	6,52	4,24

<sup>1)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>2)</sup> Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps. Depending on required delivery head, see Design section (AQUA).

<sup>3)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB		
Flow meter (WNA), internal		1 pce	1 pce	1 pce		
Flow meter (WQA), internal		1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce	1 pce		
Shell and tube heat exchanger (WQA)		+	+	+		
Flexible hoses, internal		+	+	+		
OPTIONALLY AVAILABLE		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB	Order no.	Price €
Internal electric immersion heater (8.8 kW)		+	+	+	991568	128,-
3-way switching module, internal		+	+	+	991569	244,-
3-way switching module (DN 32), external		+	+	+	290229	298,-
Service valves with flushing nozzle (2 pce, DN 32)		+	+	+	920654	280,-
Passive cooling set 1 <sup>1)</sup>		+	+	-	290864	1.424,-
Passive cooling set 2 <sup>1)</sup>		-	-	+	290865	1.592,-
Indoor unit surface design		+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	180	185	195		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~/V/Hz	1/~220-240/50	1/~220-240/50	1/~220-240/50		
Fuse protection		1x C25A 1p	1x C25A 1p	1x C32A 1p		
Rated current	A	20	25	31,5		
Max. starting current	A	41,5	54	75		
Refrigerant		R410A	R410A	R410A		
Evaporator type (WQA)		Shell and tube heat exchanger	Shell and tube heat exchanger	Shell and tube heat exchanger		
Evaporator material (WQA)		Pipes 1.4404 / outer casing 1.4307	Pipes 1.4404 / outer casing 1.4307	Pipes 1.4404 / outer casing 1.4307		
Temperature differential (WQA)	K	4	4	4		
Flow rate (WQA)	m³/h	1,80	2,20	3,00		
Internal pressure differential (WQA)	mbar	72	125	205		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	1,72	2,12	2,85		
Internal pressure differential (WNA), M2-4/M4-4	mbar	84	100	169		
Compressor type		Scroll	Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB	Order no.	Price €
Submersible pump I, speed controlled <sup>2)</sup>		+	+	+	290605	1.290,-
Submersible pump II, speed controlled <sup>2)</sup>		+	+	+	290606	1.806,-
Cooling enclosure for submersible pumps (I and II)		+	+	+	290607	336,-
Filter for heat source I		+	+	-	922484	142,-
Filter for heat source II		-	-	+	922485	309,-
Centrifugal filter for larger quantities of impurities I <sup>3)</sup>		+	+	+	922234	1.982,-
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).



# OCHSNER AQUA M4

## WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M4 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS II

UNIT TYPE		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA			
Order no.		255040V	255050V	255060V			
PRICE €		13.449,-	14.531,-	16.683,-			
Building heat load							
Suitable building heat load	kW	12 - 17	17 - 22	28 - 36			
W10/W35							
Heating output (EN14511)	kW	16,60	22,10	35,30			
Power consumption (EN14511)	kW	2,80	3,70	6,20			
Coefficient of performance COP (EN14511)		5,90	5,90	5,70			
W10/W50							
Heating output (EN14511)	kW	14,80	19,70	30,90			
Power consumption (EN14511)	kW	3,80	5,10	7,80			
Coefficient of performance COP (EN14511)		3,90	3,90	4,00			
W10/W60							
Heating output (EN14511)	kW	13,80	18,50	29,60			
Power consumption (EN14511)	kW	4,80	6,40	9,90			
Coefficient of performance COP (EN14511)		2,90	2,90	3,00			
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)							
at max. flow temperature (heating)	°C	35	55	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P rated	kW	17	14	22	19	35	30
Efficiency ETAs	%	250	159	253	159	232	159
SCOP		6,52	4,24	6,61	4,26	6,08	4,24

<sup>1)</sup> For the scope of delivery of the passive cooling sets, see Design section (TERRA).

<sup>2)</sup> Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps. Depending on required delivery head, see Design section (AQUA).

<sup>3)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA		
Flow meter (WNA), internal		1 pce	1 pce	1 pce		
Flow meter (WQA), internal		1 pce	1 pce	1 pce		
Circulation pump (WNA), internal		1 pce	1 pce	1 pce		
Safety valve (WNA), internal		1 pce	1 pce	1 pce		
Shell and tube heat exchanger (WQA)		+	+	-		
Flexible hoses, internal		+	+	+		
OPTIONALLY AVAILABLE		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA	Order no.	Price €
Electricity meter II		+	+	+	991565	351,-
Internal electric immersion heater (8.8 kW)		+	+	-	991568	128,-
3-way switching module, internal		+	+	-	991569	244,-
3-way switching module (DN 32), external		+	+	-	290229	298,-
3-way switching module (DN 40), external		-	-	+	290341	362,-
Service valves with flushing nozzle (2 pce, DN 32)		+	+	-	920654	280,-
Passive cooling set 2 <sup>1)</sup>		+	-	-	290865	1.592,-
Passive cooling set 3 <sup>1)</sup>		-	+	-	290866	1.663,-
Passive cooling set 4 <sup>1)</sup>		-	-	+	290867	2.641,-
Indoor unit surface design		+	+	+	See page 19	
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA		
Dimensions (HxWxD)	mm	1289x600x680	1289x600x680	1289x600x680		
Weight (excl. packaging)	kg	195	210	225		
Hydraulic assembly connection (dimension)	inch	1 1/4	1 1/4	1 1/4		
Phases/nominal voltage/frequency	~V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Rated current	A	10	15	25		
Fuse protection		1x C13A 3p	1x C16A 3p	1x C25A 3p		
Max. starting current	A	31,0	37,5	62,5		
Refrigerant		R410A	R410A	R410A		
Evaporator type (WQA)		Shell and tube heat exchanger	Shell and tube heat exchanger	Plate heat exchanger		
Evaporator material (WQA)		Pipes 1.4404 / outer casing 1.4307	Pipes 1.4404 / outer casing 1.4307	Stainless steel 1.4401		
Temperature differential (WQA)	K	4	4	5		
Flow rate (WQA)	m³/h	3,00	3,90	-		
		-	-	5,00		
Internal pressure differential (WQA)	mbar	205	326	-		
		-	-	608		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	2,85	3,80	6,10		
Internal pressure differential (WNA), M2-4/M4-4	mbar	169	296	685		
Compressor type		Scroll	Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA	Order no.	Price €
Submersible pump I, speed controlled <sup>2)</sup>		+	+	-	290605	1.290,-
Submersible pump II, speed controlled <sup>2)</sup>		+	+	+	290606	1.806,-
Cooling enclosure for submersible pumps (I and II)		+	+	+	290607	336,-
Stainless steel soldered plate heat exchanger AQUA 36		-	-	+	980173	2.612,-
Filter for heat source II		+	+	-	922485	309,-
Filter for heat source III		-	-	+	922486	609,-
Centrifugal filter for larger quantities of impurities I <sup>3)</sup>		+	+	-	922234	1.982,-
Centrifugal filter for larger quantities of impurities II <sup>3)</sup>		-	-	+	922235	2.411,-
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AQUA M6

## WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M6 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

UNIT TYPE		AQUA 54 HPLA	AQUA 97 HPLA
Order no.		222610	222630
PRICE €		22.731,-	29.390,-
<b>Building heat load</b>			
Suitable building heat load	kW	46 - 54	84 - 99
<b>W10/W35</b>			
Heating output (EN14511)	kW	53,90	98,80
Power consumption (EN14511)	kW	9,30	19,00
Coefficient of performance COP (EN14511)		5,80	5,20
<b>W10/W50</b>			
Heating output (EN14511)	kW	49,70	89,40
Power consumption (EN14511)	kW	11,80	22,30
Coefficient of performance COP (EN14511)		4,20	4,00
<b>W10/W60</b>			
Heating output (EN14511)	kW	46,50	83,70
Power consumption (EN14511)	kW	14,20	26,10
Coefficient of performance COP (EN14511)		3,30	3,20

### ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)

at max. flow temperature (heating)	°C	35	55	35	55
Energy efficiency class (D to A+++)		A+++	A+++	A+++	A+++
P rated	kW	54	48	99	87
Efficiency ETAs	%	240	170	210	159
SCOP		6,26	4,52	5,53	4,25

<sup>1)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA 54 HPLA	AQUA 97 HPLA		
Flow meter (WNA), external		1 pce	1 pce		
Flow meter (WQA), external		1 pce	1 pce		
Flexible hose (2" x 1000 mm with bend), external		4 pce	4 pce		
OPTIONALLY AVAILABLE		AQUA 54 HPLA	AQUA 97 HPLA	Order no.	Price €
Electricity meter III		+	+	980189	1.190,-
Circulation pump 40-1		+	-	922347	1.653,-
Circulation pump 65-1		-	+	922462	3.087,-
3-way switching module (DN 50), external		+	+	290342	386,-
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		AQUA 54 HPLA	AQUA 97 HPLA		
Dimensions (HxWxD)	mm	1889x680x698	1889x680x698		
Weight (excl. packaging)	kg	228	306		
Hydraulic assembly connection (dimension)	inch	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C40A 3p	1x C80A 3p		
Max. operating current	A	31	64		
Max. starting current	A	79	124		
Refrigerant		R410A	R410A		
Evaporator type (WQA)		Plate heat exchanger	Plate heat exchanger		
Evaporator material (WQA)		Stainless steel 1.4401	Stainless steel 1.4401		
Temperature differential (WQA)	K	4	4		
Flow rate (WQA)	m³/h	9,60	17,10		
Internal pressure differential (WQA)	mbar	60	81		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	9,20	16,90		
Internal pressure differential (WNA)	mbar	60	75		
Residual head (WNA)	mbar	499	602		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		AQUA 54 HPLA	AQUA 97 HPLA	Order no.	Price €
Stainless steel soldered plate heat exchanger AQUA 54		+	-	980174	5.556,-
Stainless steel soldered plate heat exchanger AQUA 97		-	+	980176	5.789,-
Filter for heat source III		+	+	922486	609,-
Centrifugal filter for larger quantities of impurities III <sup>1)</sup>		+	-	922276	3.133,-
Centrifugal filter for larger quantities of impurities IV <sup>1)</sup>		-	+	922277	3.271,-
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

# OCHSNER AQUA M6

## WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)



- M6 INDOOR UNIT
- HEATING/COOLING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

UNIT TYPE		AQUA 54 CPLA		AQUA 97 CPLA		
Order no.		222618		222638		
PRICE €		28.905,-		35.690,-		
Building heat load						
Suitable building heat load		kW	46 - 54	84 - 99		
W10/W35						
Heating output (EN14511)		kW	53,90	98,80		
Power consumption (EN14511)		kW	9,30	19,00		
Coefficient of performance COP (EN14511)			5,80	5,20		
W10/W50						
Heating output (EN14511)		kW	49,70	89,40		
Power consumption (EN14511)		kW	11,80	22,30		
Coefficient of performance COP (EN14511)			4,20	4,00		
W10/W60						
Heating output (EN14511)		kW	46,50	83,70		
Power consumption (EN14511)		kW	14,20	26,10		
Coefficient of performance COP (EN14511)			3,30	3,20		
W10/W18						
Cooling capacity (EN14511)		kW	56,00	100,00		
Power consumption (EN14511)		kW	9,00	21,20		
Energy efficiency ratio EER (EN14511)			6,20	4,70		
W10/W7						
Cooling capacity (EN14511)		kW	38,00	74,50		
Power consumption (EN14511)		kW	8,10	18,20		
Energy efficiency ratio EER (EN14511)			4,70	4,10		
ENERGY EFFICIENCY (AVERAGE CLIMATE ZONE)						
at max. flow temperature (heating)		°C	35	55	35	55
Energy efficiency class (D to A+++)			A+++	A+++	A+++	A+++
P rated		kW	54	48	99	87
Efficiency ETAs		%	240	170	210	159
SCOP			6,26	4,52	5,53	4,25

<sup>1)</sup> Part no. 980169 is a function extension for the basic Heating/Cooling package (980152). Part no. 980169 cannot be ordered separately.

<sup>2)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA 54 CPLA	AQUA 97 CPLA		
Remote controller FB 6104 RH with graphic display and humidity sensor, white		1 pce	1 pce		
Flow meter (WNA), external		1 pce	1 pce		
Flow meter (WQA), external		1 pce	1 pce		
Flexible hose (2" x 1000 mm with bend), external		4 pce	4 pce		
OPTIONALLY AVAILABLE		AQUA 54 CPLA	AQUA 97 CPLA	Order no.	Price €
Surcharge for heating/cooling incl. remote controller with touchscreen (incl. web2com server) <sup>1)</sup>		+	+	980169	573,-
Electricity meter III		+	+	980189	1.190,-
Circulation pump 40-1		+	-	922347	1.653,-
Circulation pump 65-1		-	+	922462	3.087,-
3-way switching module (DN 50), external		+	+	290342	386,-
DHW tank/buffer tank		+	+	See page 81	
INDOOR UNIT		AQUA 54 CPLA	AQUA 97 CPLA		
Dimensions (HxWxD)	mm	1889x680x698	1889x680x698		
Weight (excl. packaging)	kg	228	306		
Hydraulic assembly connection (dimension)	inch	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C40A 3p	1x C80A 3p		
Max. operating current	A	31	64		
Max. starting current	A	79	124		
Refrigerant		R410A	R410A		
Evaporator type (WQA)		Plate heat exchanger	Plate heat exchanger		
Evaporator material (WQA)		Stainless steel 1.4401	Stainless steel 1.4401		
Temperature differential (WQA)	K	4	4		
Flow rate (WQA)	m³/h	9,60	17,10		
Internal pressure differential (WQA)	mbar	60	81		
Temperature differential (WNA)	K	5	5		
Flow rate (WNA)	m³/h	9,20	16,90		
Internal pressure differential (WNA)	mbar	60	75		
Residual head (WNA)	mbar	499	602		
Compressor type		Scroll	Scroll		
OPTIONAL, HEAT SOURCE SYSTEM		AQUA 54 CPLA	AQUA 97 CPLA	Order no.	Price €
Stainless steel soldered plate heat exchanger AQUA 54		+	-	980174	5.556,-
Stainless steel soldered plate heat exchanger AQUA 97		-	+	980176	5.789,-
Filter for heat source III		+	+	922486	609,-
Centrifugal filter for larger quantities of impurities III <sup>2)</sup>		+	-	922276	3.133,-
Centrifugal filter for larger quantities of impurities IV <sup>2)</sup>		-	+	922277	3.271,-
SERVICES				Order no.	Price €
Commissioning				See page 145	

**Notes:**

- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).



# OCHSNER AQUA MULTI M6

**WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)**  
CASCADE PACKAGES



MULTI QUATTRO



MULTI TRIO



MULTI DUO



- MASTER/SLAVE CASCADE
- M6 INDOOR UNIT
- HEATING
- MAX. FLOW TEMP. 65°C
- OTE CONTROLLER
- ON/OFF COMPRESSOR
- DELIVERY CLASS III

UNIT TYPE		AQUA MULTI DUO 194 HPLA	AQUA MULTI TRIO 291 HPLA	AQUA MULTI QUATTRO 388 HPLA
Order no.		290856	290859	290862
<b>PRICE €</b>		<b>52.919,-</b>	<b>79.379,-</b>	<b>105.839,-</b>
<b>W10/W35</b>				
Heating output (EN14511)	kW	98,8 - 197,6	98,8 - 296,4	98,8 - 395,2
Power consumption (EN14511)	kW	19 - 38	19 - 57	19 - 76
Coefficient of performance COP (EN14511)		5,2	5,2	5,2
<b>W10/W50</b>				
Heating output (EN14511)	kW	89,4 - 178,8	89,4 - 268,2	89,4 - 357,6
Power consumption (EN14511)	kW	22,3 - 44,6	22,3 - 66,9	22,3 - 89,2
Coefficient of performance COP (EN14511)		4	4	4
<b>W10/W60</b>				
Heating output (EN14511)	kW	83,7 - 167,4	83,7 - 251,1	83,7 - 334,8
Power consumption (EN14511)	kW	26,1 - 52,2	26,1 - 78,3	26,1 - 104,4
Coefficient of performance COP (EN14511)		3,2	3,2	3,2

<sup>1)</sup> Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD		AQUA MULTI DUO 194 HPLA	AQUA MULTI TRIO 291 HPLA	AQUA MULTI QUATTRO 388 HPLA		
Flow meter (WNA), external		2 pce	3 pce	4 pce		
Flow meter (WQA), external		2 pce	3 pce	4 pce		
Flexible hose (2" x 1000 mm with bend), external		8 pce	12 pce	16 pce		
OPTIONALLY AVAILABLE (PRICE/UNIT)		AQUA MULTI DUO 194 HPLA	AQUA MULTI TRIO 291 HPLA	AQUA MULTI QUATTRO 388 HPLA	Order no.	Price €
Electricity meter III		2 pce	3 pce	4 pce	980189	1.190,-
Circulation pump 65-1		2 pce	3 pce	4 pce	922462	3.087,-
DHW tank/buffer tank		+	+	+	See page 81	
INDOOR UNIT		AQUA MULTI DUO 194 HPLA	AQUA MULTI TRIO 291 HPLA	AQUA MULTI QUATTRO 388 HPLA		
Dimensions (HxWxD)	mm	1889x2160x698	1889x3640x698	1889x5120x698		
Weight (excl. packaging)	kg	612	918	1224		
Hydraulic assembly connection (dimension)	inch	2	2	2		
Phases/nominal voltage/frequency	~/V/Hz	3/~380-400/50	3/~380-400/50	3/~380-400/50		
Fuse protection		1x C80A 3p / 1x C80A 3p	1x C80A 3p / 1x C80A 3p / 1x C80A 3p	1x C80A 3p / 1x C80A 3p / 1x C80A 3p / 1x C80A 3p		
Max. operating current	A	64 / 64	64 / 64 / 64	64 / 64 / 64 / 64		
Max. starting current	A	124 / 124	124 / 124 / 124	124 / 124 / 124 / 124		
Refrigerant		R410A	R410A	R410A		
Evaporator type (WQA)		Plate heat exchanger	Plate heat exchanger	Plate heat exchanger		
Evaporator material (WQA)		Stainless steel 1.4401	Stainless steel 1.4401	Stainless steel 1.4401		
Temperature differential (WQA)	K	4	4	4		
Flow rate (WQA)	m³/h	17,1 - 34,2	17,1 - 51,3	17,1 - 68,4		
Internal pressure differential (WQA)	mbar	81 / 81	81 / 81 / 81	81 / 81 / 81 / 81		
Temperature differential (WNA)	K	5	5	5		
Flow rate (WNA)	m³/h	16,9 - 33,8	16,9 - 50,7	16,9 - 67,6		
Internal pressure differential (WNA)	mbar	75 / 75	75 / 75 / 75	75 / 75 / 75 / 75		
Residual head (WNA)	mbar	602 / 602	602 / 602 / 602	602 / 602 / 602 / 602		
Compressor type		Scroll	Scroll	Scroll		
Number of compressors	pce	2	3	4		
OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)		AQUA MULTI DUO 194 HPLA	AQUA MULTI TRIO 291 HPLA	AQUA MULTI QUATTRO 388 HPLA	Order no.	Price €
Stainless steel soldered plate heat exchanger AQUA 97		2 pce	3 pce	4 pce	980176	5.789,-
Filter for heat source III		2 pce	3 pce	4 pce	922486	609,-
Centrifugal filter for larger quantities of impurities IV <sup>1)</sup>		2 pce	3 pce	4 pce	922277	3.271,-
SERVICES					Order no.	Price €
Commissioning					See page 145	

**Notes:**

- Dimensions (HxWxD): The stated widths include the indoor units plus the minimum distance between them.
- Please observe the machine-specific engineering and installation information, see Design section (AQUA). Hydraulic sizing specifications take into account OCHSNER accessories.

# QUALITY ACCESSORIES

FROM OCHSNER



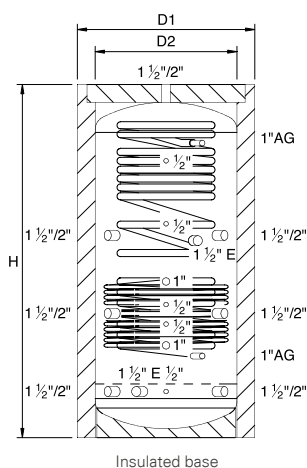


# TANKS

## UNIFRESH®

- Fresh DHW heater incl. thermal insulation
- With or without solar coil
- Superior energy efficiency

### UNI 500(S) / 800(S) / 1000(S)



Main connection dimensions:  
 1 1/2" UNI 500(S)  
 UNI 800(S)  
 2" UNI 1000(S)

APPLIANCE TYPE	UNI 500	UNI 500S	UNI 800	UNI 800S	UNI 1000	UNI 1000S
Order no.	920711	920820	920818	920821	920712	920822
PRICE €	2.363,-	2.587,-	3.374,-	3.712,-	3.936,-	4.162,-
Delivery class	I	II	I	II	I	II
Energy efficiency class (F to A+)	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>

### SPECIFICATION

Height H (with insulation)	mm	1865	1930	1910	1910	2150	2160
Diameter D1 (with insulation)	mm	790	810	1030	1030	950	1030
Diameter D2 (without insulation)	mm	- 2)	650	790	790	790 3)	790
Weight	kg	160	160	190	190	210	210
Tank volume	l	544	552	778	778	896	903
Electric immersion heater usable up to max.	kW	9	9	9	9	9	9
Smooth tube coil	m <sup>2</sup>	-	2,3	-	2,5	-	3,1
Freshwater coil	l / m <sup>2</sup>	28 / 5.45	28 / 5.45	31 / 5.95	31 / 5.95	51 / 9.8	51 / 9.8
Tilt height with insulation	mm	2025	2095	2170	2170	2351	2395
Tilt height without insulation	mm	-	1965	1960	1960	-	2200
Tank material		Steel, non-coated					
Tank insulation (exterior wall and floor)	mm	75 (PU hard) 2)	70 (PU hard)	110 (PU hard)	110 (PU hard)	75 (PU hard) 3)	110 (PU hard)
Standby heat losses 1)	W	77	83	96	96	100	102
Number of sleeves for electric immersion heater		2	2	2	2	2	2
Max. operating pressure/test pressure	bar	3/4.5	3/4.5	3/4.5	3/4.5	3/4.5	3/4.5

### UNIFRESH® SIZING

Unit type	UNI 500		UNI 800		UNI 1000	
	UNI 500S		UNI 800S		UNI 1000S	
DHW output 4) as DHW tank	at 15 l/min	Litre	300	500	625	
	at 20 l/min	Litre	280	450	560	
	at 30 l/min	Litre	230	370	460	
Max. heat pump output, DHW only 5)		kW	23	30	36	
Coefficient of performance NL at 15 l/min			2,5	3,5	4,4	
DHW output 6) as combination buffer tank	at 15 l/min	Litre	220	330	410	
	at 20 l/min	Litre	180	270	340	
	at 30 l/min	Litre	130	210	260	
Max. heat pump output with combination buffer tank		kW	11	17	22	
Coefficient of performance NL at 15 l/min			1,0	2,5	3,2	

1) Standby heat losses according to EN12897:2006

2) Non-removable tank insulation (fixed foam). D1 must be taken into account as transport dimension.

3) Partly fixed foam insulation (two removable insulation sections). D2 can be taken into account as transport dimension.

4) Use of Unifresh® tank exclusively for DHW heating

5) Max. heat pump output [kW] at standard point (A2/W35; G-1/W35; B0/W35; W10/W35)

6) Use of Unifresh® tank as a combination buffer tank according to OCHSNER schematic diagrams.  
 DHW output [litres] = delivery capacity [litres] per charge cycle.

1 1/2" E: Sleeve suitable for fitting an electric immersion heater

E: for installing an electric immersion heater with flange

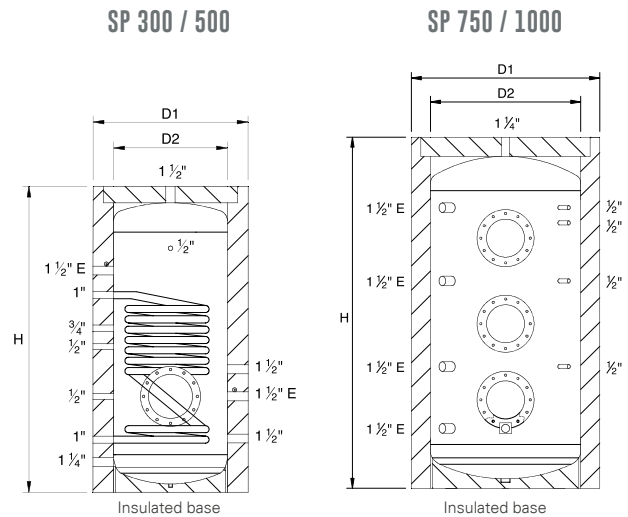
#### Please note:

- In most models, the tank insulation can be removed. Corresponding footnotes mention if the insulation cannot be removed fully or at all.
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- Recommended tank volume: 30 l/kW heat pump output, for MAP funding and smart grid functionality. In Germany, a correctly sized buffer tank (30 l/kW for standard consumption) is taken into consideration in the higher MAP funding.
- Information on delivery capacity [litres] at 60°C tank temperature, 10°C cold water temperature and 45°C draw-off temperature at draw-off rates of 15, 20 or 30 l/min when using a tap with a thermostat function.
- OCHSNER tanks have connectors of the shape and size required for the hydraulics. We provide no warranty for products manufactured by external suppliers.

# TANKS

## HEAT PUMP DHW TANKS

- DHW heating through an external plate heat exchanger
- Incl. thermal insulation
- Superior energy efficiency



APPLIANCE TYPE	SP 300	SP 500	SP 750	SP 1000
Order no.	920823	920825	920584	920585
PRICE €	1.349,-	1.800,-	2.812,-	3.038,-
Delivery class	I	I	I	I
Energy efficiency class (F to A+)	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>

### SPECIFICATION

Height H (with insulation)	mm	1460	1760	1865	2115
Diameter D1 (with insulation)	mm	710	810	1030	1030
Diameter D2 (without insulation)	mm	550	650	790	790
Weight	kg	100	140	150	160
Tank volume	l	295	499	777	890
Electric immersion heater usable up to max.	kW	6	9	9	9
Smooth tube coil	m <sup>2</sup>	1,1	1,6	–	–
Tilt height with insulation	mm	1615	1930	2131	2352
Tilt height without insulation	mm	1495	1800	1895	2140
Tank material		Enamelled steel			
Tank insulation (exterior wall and floor)	mm	70 (PU hard)	70 (PU hard)	120 (PU hard)	120 (PU hard)
Number of flanges (12/8-hole)		1 (12-hole)	1 (12-hole)	3 (12-hole)	3 (12-hole)
Flange outer diameter	mm	290	290	290	290
Flange inner diameter	mm	210	210	210	210
Flange hole circle	mm	260	260	260	260
Standby heat losses <sup>1)</sup>	W	67	81	135	142
Number of sleeves for electric immersion heater		2 <sup>8)</sup>	2 <sup>8)</sup>	2 <sup>8)</sup>	2 <sup>8)</sup>
Max. operating pressure/test pressure	bar	6/9	6/9	6/9	6/9

<sup>1)</sup> Standby heat losses according to EN12897:2006

<sup>2)</sup> Non-removable tank insulation (fixed foam). D1 must be taken into account as transport dimension.

<sup>3)</sup> Suitable up to 17 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% V<sub>nom</sub> HP. With air as the heat source, the output at 35°C air temperature must be taken into account.

<sup>4)</sup> Suitable up to 20 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% V<sub>nom</sub> HP. With air as the heat source, the output at 35°C air temperature must be taken into account.

<sup>5)</sup> When sizing the heating coil, take into account the fact that the heat pump works with a correspondingly higher heat source temperature in summer, increasing the heat pump output accordingly.

<sup>6)</sup> Tank incl. anode tester

<sup>7)</sup> Suitable up to 8 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% V<sub>nom</sub> HP. With air as the heat source, the output at 35°C air temperature must be taken into account.

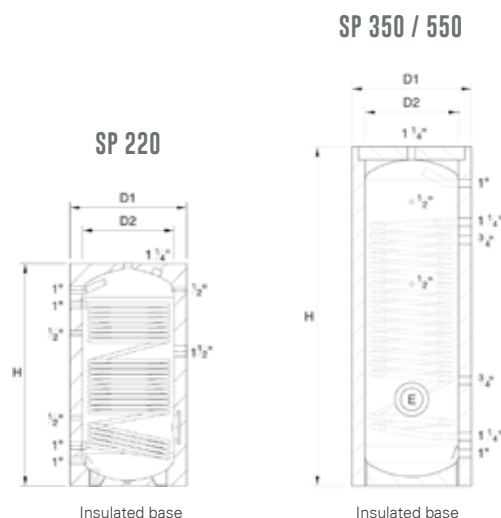
<sup>8)</sup> For additional sleeves (e.g. to insert a magnesium anode), separate flange plates are required: part no. 920111

**1 1/2" E:** Sleeve suitable for fitting an electric immersion heater

**E:** for installing an electric immersion heater with flange

## HEAT PUMP DHW TANKS WITH INDIRECT COIL

- DHW heating through a built-in coil
- Incl. thermal insulation
- Superior energy efficiency



APPLIANCE TYPE	SP 220	SP 350 <sup>6)</sup>	SP 550 <sup>6)</sup>
Order no.	920889	920709	920710
<b>PRICE €</b>	<b>1.276,-</b>	<b>1.985,-</b>	<b>2.426,-</b>
Delivery class	II	I	I
Energy efficiency class (F to A+)	<b>B</b> ➔	<b>B</b> ➔	<b>B</b> ➔

### SPECIFICATION

Height H (with insulation)	mm	1215	1820	2000
Diameter D1 (with insulation)	mm	640	650	750
Diameter D2 (without insulation)	mm	- 2)	- 2)	- 2)
Weight	kg	85	130	175
Tank volume	l	190	314	493
Electric immersion heater usable up to max.	kW	–	6	6
Smooth tube coil	m <sup>2</sup>	3 7)	4.5 3) 5)	5.2 4) 5)
Tilt height with insulation	mm	1375	1933	2136
Tilt height without insulation	mm	–	–	–
Tank material		Enamelled steel		
Tank insulation (exterior wall and floor)	mm	70 (PU hard) 2)	75 (PU hard) 2)	75 (PU hard) 2)
Number of flanges (12/8-hole)		1 (8-hole)	1 (8-hole)	1 (8-hole)
Flange outer diameter	mm	180	170	170
Flange inner diameter	mm	120	115	115
Flange hole circle	mm	150	150	150
Standby heat losses <sup>1)</sup>	W	51	66	79
Number of sleeves for electric immersion heater		–	1	1
Max. operating pressure/test pressure	bar	10/15	6/9	6/9

#### Please note:

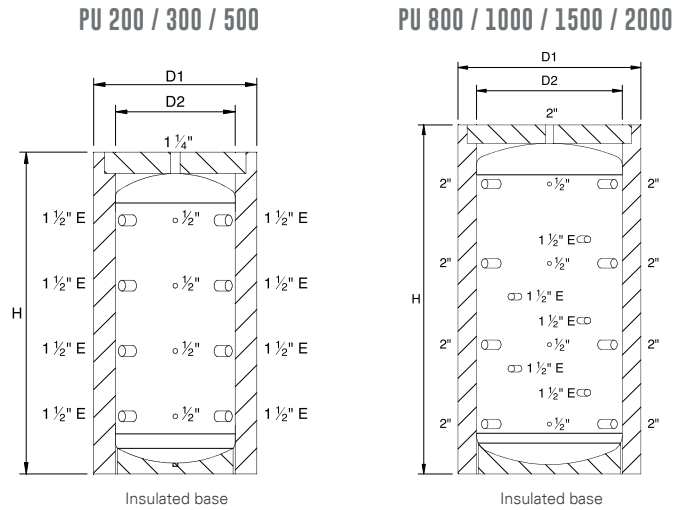
- In most models, the tank insulation can be removed. Corresponding footnotes mention if the insulation cannot be removed fully or at all.
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- OCHSNER tanks have connectors of the shape and size required for the hydraulics. We provide no warranty for products manufactured by external suppliers.
- Limit W15/W50 DHW temperature and max. 7K spread between coil inlet and outlet.



# TANKS

## HEAT PUMP BUFFER TANKS

- Buffer tank, incl. thermal insulation
- Tank for optimum heat pump stratification
- Superior energy efficiency



APPLIANCE TYPE	PU 200	PU 300	PU 500	PU 800	PU 800S
Order no.	920827	920828	920829	920831	920830
PRICE €	550,-	660,-	771,-	1.323,-	1.544,-
Delivery class	I	I	I	I	II
Energy efficiency class (F to A+)	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>

### SPECIFICATION

Height H (with insulation)	mm	1520	1460	1760	1910	1910
Diameter D1 (with insulation)	mm	610	710	810	1030	1030
Diameter D2 (without insulation)	mm	450	550	650	790	790
Weight	kg	65	80	110	130	130
Tank volume	l	217	295	499	778	778
Electric immersion heater usable up to max.	kW	3	6	9	9	9
Smooth tube coil	m <sup>2</sup>	–	–	–	–	2,5
Tilt height with insulation	mm	1630	1615	1950	2170	2170
Tilt height without insulation	mm	1535	1495	1795	1960	1960
Tank material		Steel, non-coated				
Tank insulation (exterior wall and floor)	mm	70 (PU hard)	70 (PU hard)	70 (PU hard)	110 (PU hard)	110 (PU hard)
Standby heat losses <sup>1)</sup>	W	60	67	81	96	96
Number of sleeves for electric immersion heater		4	4	4	5	1
Max. operating pressure/test pressure	bar	3/4,5	3/4,5	3/4,5	3/4,5	3/4,5
Max. flow rate for heat pump	m <sup>3</sup> /h	1,1	1,7	2,9	4,6	2,9

### FOR CASCADES WITH HEAT PUMP MANAGEMENT OF THE OTE 3, <sup>4)</sup> APPLIES

Standard tanks		PU 200 DN40 1 1/2" fem.	PU 300 DN40 1 1/2" fem.	PU 500 DN 40 1 1/2" fem.	PU 800 DN 50 2" fem.	PU 1000 DN50 2" fem.	PU 1500 DN50 2" fem.
Max. output per heat pump at standard point	kW	5	8	13	21	27	46
Max. output of cascade at standard point	kW	23	23	23	47	47	59
Max. total flow rate	m <sup>3</sup> /h	4,0	4,0	4,0	8,0	9,0	9,0

#### Example:

2 pce. AIR 29, output per HP at standard point (A2/W35) 21.8 kW with nominal flow rate 4.4 m<sup>3</sup>/h

→ Cascade output 43.6 kW with total flow rate 8.8 m<sup>3</sup>/h

→ PU 1000 DN 50 1 1/2" fem.

<sup>1)</sup> Standby heat losses according to EN12897:2006

<sup>2)</sup> Including AQUA 97, TERRA 76

<sup>3)</sup> PU 2000 is required for AIR 80

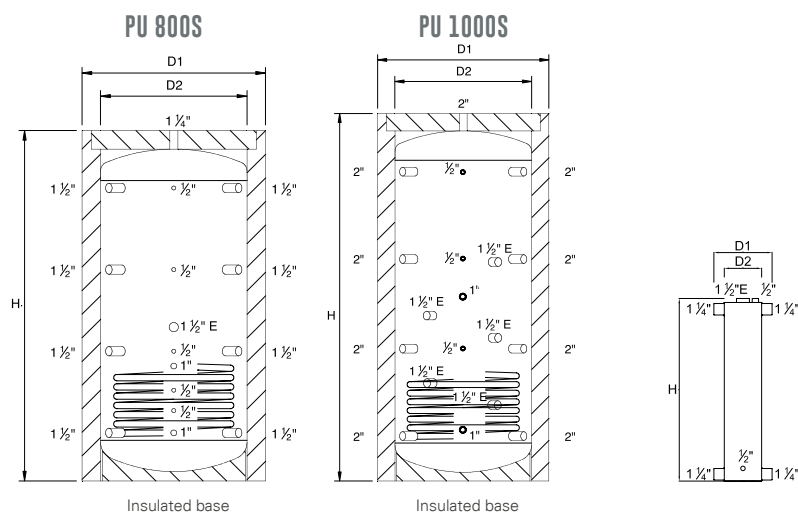
<sup>4)</sup> A larger tank volume may be necessary for systems with cascade management via a third party controller.

**1 1/2" E:** Sleeve suitable for fitting an electric immersion heater

**E:** for installing an electric immersion heater with flange



ÖKO-MASTER  
SERIES®



Appliance type	PU 1000	PU 1000S	PU 1500	PU 2000	Low loss header
Order no.	920832	920837	920789	920784	990798
Price €	1.432,-	1.653,-	3.051,-	3.975,-	295,-
Delivery class	I	II	II	III	I
Energy efficiency class (F to A+)	<b>B</b>	<b>B</b>	<b>C</b>		

## SPECIFICATION

Height H (with insulation)	mm	2160	2160	2400	2450	780
Diameter D1 (with insulation)	mm	1030	1030	1190	1300	189
Diameter D2 (without insulation)	mm	790	790	950	1100	159
Weight	kg	150	150	200	265	12
Tank volume	l	903	903	1468	2055	14
Electric immersion heater usable up to max.	kW	9	9	9	9	9
Smooth tube coil	m <sup>2</sup>	–	2,2	–	–	–
Tilt height with insulation	mm	2395	2395	2679	2774	800
Tilt height without insulation	mm	2200	2200	2450	2510	–
Tank material	Steel, non-coated					
Tank insulation (exterior wall and floor)	mm	110 (PU hard)	110 (PU hard)	110 (PU hard)	110 (PU hard)	PU soft
Standby heat losses <sup>1)</sup>	W	102	102	141	229	40
Number of sleeves for electric immersion heater		5	5	5	5	1
Max. operating pressure/test pressure	bar	3/4.5	3/4.5	3/4.5	3/4.5	3/4.5
Max. flow rate for heat pump	m <sup>3</sup> /h	6	6	10.3 <sup>2)</sup>	13.7 <sup>3)</sup>	–

**Please note:**

- In most models, the tank insulation can be removed. Corresponding footnotes mention if the insulation cannot be removed fully or at all.
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- Recommended tank volume: 30 l/kW heat pump output, for MAP funding and smart grid functionality. In Germany, a correctly sized buffer tank (30 l/kW for standard consumption) is taken into consideration in the higher MAP funding.
- OCHSNER tanks have connectors of the shape and size required for the hydraulics. We provide no warranty for products manufactured by external suppliers.
- A low loss header is suitable only for a constant nominal flow rate on the heat sink side; individual room control and cooling mode are not, therefore, permissible.
- Tanks with a capacity of 1500 litres or more must be transported horizontally. For unloading, a forklift truck or crane is required.

# SPECIAL TANK WITH FLANGE

## HEAT PUMP BUFFER TANKS

- Buffer tank, incl. thermal insulation
- Tank for optimum heat pump stratification
- Superior energy efficiency

APPLIANCE TYPE		PU 1000		PU 1500		PU 1500		PU 2000	
		incl. flange DN65		incl. flange DN65		incl. flange DN80		incl. flange DN80	
Number of flanges	pce	4	8	4	8	4	8	4	8
Order no.		920698	920699	920855	920856	920857	920858	920801	920852
PRICE €		2.133,-	2.392,-	3.448,-	3.808,-	3.490,-	3.892,-	5.017,-	5.421,-
Flange class		PN 6		PN 6		PN 6		PN6	
Nominal flange width		DN 65		DN 65		DN 80		DN 80	
Delivery class		III		III		III		III	
Energy efficiency class (F to A+)		<b>B</b>		<b>C</b>		<b>C</b>			

### SPECIFICATION

Height H (with insulation)	mm	2110		2400		2400		2470	
Diameter D1 (with insulation)	mm	1030		1190		1190		1340	
Diameter D2 (without insulation)	mm	790		950		950		1100	
Weight	kg	173	183	267	286	281	295	330	344
Tank volume	l	914		1498		1498		2055	
Electric immersion heater usable up to max.	kW	9		9		9		9	
Tilt height without insulation	mm	2155		2450		2450		2530	
Tank material		Steel, non-coated							
Tank insulation (exterior wall and floor)	mm	110 (PU hard)		110 (PU hard)		110 (PU hard)		110 (PU hard)	
Standby heat losses <sup>1)</sup>	W	102		141		141			
Number of sleeves for electric immersion heater		5		5		5		5	
Max. operating pressure/test pressure	bar	3/4.5		3/4.5		3/4.5		3/4.5	

### FOR CASCADES WITH HEAT PUMP MANAGEMENT OF THE OTE 3, <sup>2)</sup> APPLIES

Special tank with flange		PU 1000 DN 65	PU 1500 DN 65	PU 1500 DN 80	PU 2000 DN 80	PU 2000 DN 100	PU 3000 DN 100	PU 3000 DN 125
Max. output per heat pump at standard point	kW	30	46	46	65	65	92	92
Max. output of cascade at standard point	kW	80	80	140	140	200	250	460
Max. total flow rate	m³/h	13,0	13,0	27,0	27,0	37,0	49,0	79,0

#### Example:

3 pce. AIR 80, output per HP at standard point (A2/W35) 65.1 kW with nominal flow rate 13.0 m³/h

→ Cascade output 195.3 kW with total flow rate 39.0 m³/h

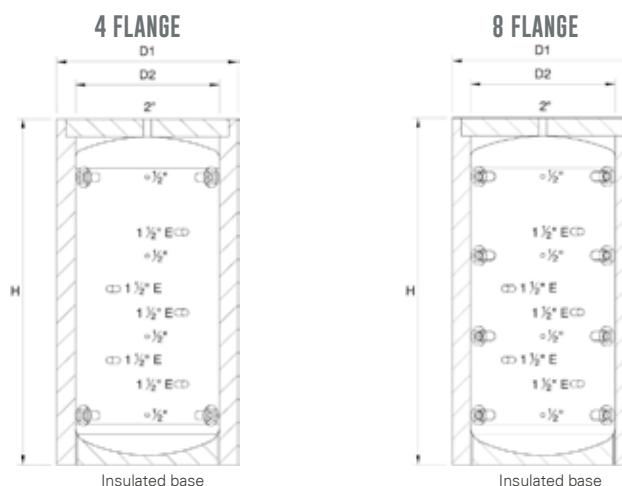
→ PU 3000 DN 100

<sup>1)</sup> Standby heat losses according to EN12897:2006

<sup>2)</sup> A larger tank volume may be necessary for systems with cascade management via a third party controller.

1½" E: Sleeve suitable for fitting an electric immersion heater

E: for installing an electric immersion heater with flange



APPLIANCE TYPE		PU 2000 incl. flange DN 100		PU 3000 incl. flange DN 100		PU 3000 incl. flange DN 125	
	pce	4	8	4	8	4	8
Number of flanges							
Order no.		920853	920854	920604	920609	920610	920611
PRICE €		5.128,-	5.644,-	7.009,-	7.521,-	7.077,-	7.660,-
Flange class		PN 6		PN 6		PN 6	
Nominal flange width		DN 100		DN 100		DN 125	
Delivery class		III		III		III	

## SPECIFICATION

Height H (with insulation)	mm	2470	2540	2540			
Diameter D1 (with insulation)	mm	1340	1490	1490			
Diameter D2 (without insulation)	mm	1100	1250	1250			
Weight	kg	338	360	396	414	404	430
Tank volume	l	2055	3079	3079			
Electric immersion heater usable up to max.	kW	9	9	9			
Tilt height without insulation	mm	2530	2615	2615			
Tank material	Steel, non-coated						
Tank insulation (exterior wall and floor)	mm	110 (PU hard)	110 (PU hard)	110 (PU hard)			
Standby heat losses <sup>1)</sup>	W						
Number of sleeves for electric immersion heater		5	5	5			
Max. operating pressure/test pressure	bar	3/4.5	3/4.5	3/4.5			

### Please note:

- In most models, the tank insulation can be removed. Corresponding footnotes mention if the insulation cannot be removed fully or at all.
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- Recommended tank volume: 30 l/kW heat pump output, for MAP funding and smart grid functionality. In Germany, a correctly sized buffer tank (30 l/kW for standard consumption) is taken into consideration in the higher MAP funding.
- OCHSNER tanks have connectors of the shape and size required for the hydraulics. We provide no warranty for products manufactured by external suppliers.
- Tanks with a capacity of 1500 litres or more must be transported horizontally. For unloading, a forklift truck or crane is required.

# FRESHWATER MODULES UP TO 48 L/MIN

Freshwater modules are used for hygienic domestic hot water heating. The use of a plate heat exchanger results in a separation of heat pump buffer tank and fresh water. The heat quantity required for DHW heating is drawn only from the heating water in the buffer tank, meaning that no DHW is stored.



APPLIANCE TYPE		OFWM 19	OFWM 28	OFWM 36	OFWM 48
Order no.		920622	920623	920624	920798
Delivery class		II	II	II	II
<b>Price € incl. accessories</b>		<b>1.596,-</b>	<b>1.877,-</b>	<b>2.061,-</b>	<b>2.818,-</b>
Order no., nickel-soldered		920754	920755	920756	920799
<b>Price € incl. accessories, nickel-soldered</b>		<b>2.142,-</b>	<b>2.539,-</b>	<b>2.779,-</b>	<b>4.029,-</b>
Nominal draw-off rate <sup>1)</sup>	l/min	19	28	36	48
Cold water and DHW connections		1" male DN 25	1" male DN 25	1" male DN 25	1" male DN 25
Power supply fully wired	V	230	230	230	230
Installation dimensions (HxWxD)	mm	725x376x257	725x376x257	725x376x257	760x480x260

## SPECIFICATION <sup>1)</sup>

		Draw-off rate	l/min	19	28	36	48
			kW	46,3	68,3	87,8	117
Tank volume	Delivery capacity [litres] Cold water 10°C, DHW 45°C, tank 60°C	Heating energy quantity per heat-up from 25°C to 60°C					
Litre	Litre	kWh	Draw-off time in minutes				
200	150	6,1	7,9	5,3	4,1	3,0	
300	225	9,1	11,8	8,1	6,2	4,7	
500	375	15,2	19,7	13,4	10,4	7,8	
800	600	24,4	31,6	21,4	16,6	12,5	
1000	750	30,5	39,5	26,8	20,8	15,6	
1500	1125	45,7	59,3	40,2	31,2	23,4	
2000	1500	61,1	79,1	53,6	41,7	31,2	

For convenient DHW heating with simultaneous optimum heat pump operation by means of a heat pump buffer tank:

Minimum return temperature 25°C and considerable reduction in limescale thanks to thermal control valve (max. flow temperature 55°C) for max. draw-off temperature 45°C at nominal draw-off rate. <sup>1)</sup>

## INCLUDED WITH A FRESHWATER MODULE

Thermally long heat exchanger, energy saving pump, robust flow switch, shut-off on buffer side, flushing aperture and wall bracket, thermal insert on buffer side for constant draw-off temperature (55°C for OFWM 19/28/36 and 65°C for OFWM 48 as standard). NOT supplied with the modules is the safety equipment necessary for the DHW side according to national and local standards and regulations.

## HEAT PUMP FRESHWATER AND CIRCULATION HEATING

Drinking water regulations and standards, e.g. in Austria and Germany, call for comparatively high DHW temperatures for DHW circulation operation (min. +60°C) in anti-legionella mode. These instructions are to be observed without fail, depending on the system and type of project. In domestic systems (e.g. detached houses), the requirements are usually less stringent. Select a heat pump with an adequate flow temperature for buffer charging. For a required draw-off temperature above 55°C, a separate thermal insert with 65°C must be used for OFWM 19/28/36.

## OPTIONAL ACCESSORIES

	Models	Order no.	Price €
Buffer return optimisation set	OFWOR	920668	183,-
DHW circulation pump set (incl. DHW circulation pump and timer) <sup>2)</sup>	OFWZP	920669	503,-
Thermal insert for 65°C (OFWM 19/28/36)		920570	54,-

	Energy efficiency class (F to A+)	Connected load kW	Phases/nominal voltage/frequency ~V/Hz	Nominal capacity l	Standby power consumption (24 h at 65°C) kWh	Dimensions (HxWxD) mm	Order no.	Price €
Wall mounted tank 10 litres	A	2	1/230/50	10	0,34	503x295x275	920838	580,-
Wall mounted tank 30 litres	A	1-4	1/230/50	30	0,46	770x410x420	920839	858,-
		1-6	3/400/50					

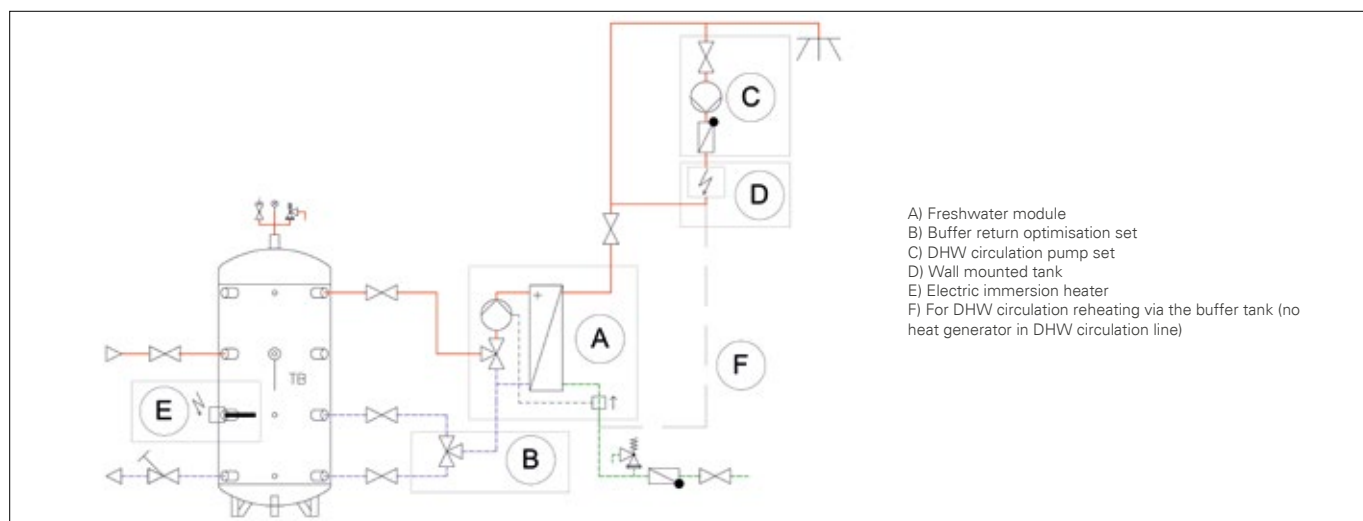
The system installer and operator are responsible for compliance with applicable regional and national hygiene requirements. OCHSNER can only deliver the associated components for compliance with these requirements.

## HEAT PUMP FRESHWATER MODULE PACKAGES

Packages with heat pump buffer tank, freshwater module, option of DHW circulation set and buffer return optimisation for DHW circulation operation. The size of the freshwater module is dependent on the number of main draw-off points that can be in use simultaneously in the building. The size of the heat pump buffer tank is dependent on the number of residents/users and the output of the reheating source.

		Freshwater module				Freshwater module with DHW circulation <sup>2)</sup>				Freshwater module with DHW circulation and buffer return optimisation <sup>2)</sup>			
		19 l/min	28 l/min	36 l/min	48 l/min	19 l/min	28 l/min	36 l/min	48 l/min	19 l/min	28 l/min	36 l/min	48 l/min
Tanks [l]	comprising (1 pce. each)	OFWM 19	OFWM 28	OFWM 36	OFWM 48	OFWM 19 OFWZP	OFWM 28 OFWZP	OFWM 36 OFWZP	OFWM 48 OFWZP	OFWM 19 OFWZP OFWOR	OFWM 28 OFWZP OFWOR	OFWM 36 OFWZP OFWOR	OFWM 48 OFWZP OFWOR
300	PU 300 DN 40	Order no.	180028	-	-	180043	-	-	-	180058	-	-	-
		Price €	2.189,-	-	-	2.677,-	-	-	-	2.854,-	-	-	-
500	PU 500 DN 40	Order no.	180029	180033	-	180044	180048	-	-	180059	180063	-	-
		Price €	2.296,-	2.569,-	-	2.784,-	3.057,-	-	-	2.961,-	3.234,-	-	-
800	PU 800 DN 50	Order no.	180030	180034	180037	180040	180045	180049	180052	180060	180064	180067	180070
		Price €	2.831,-	3.104,-	3.283,-	4.017,-	3.319,-	3.592,-	3.770,-	3.497,-	3.769,-	3.948,-	4.682,-
1000	PU 1000 DN 50	Order no.	180031	180035	180038	180041	180046	180050	180053	180056	180061	180065	180068
		Price €	2.937,-	3.210,-	3.389,-	4.123,-	3.425,-	3.698,-	3.876,-	3.602,-	3.875,-	4.054,-	4.788,-
1500	PU 1500 DN 50	Order no.	180032	180036	180039	180042	180047	180051	180054	180057	180062	180066	180072
		Price €	4.508,-	4.781,-	4.959,-	5.693,-	4.996,-	5.269,-	5.447,-	5.173,-	5.446,-	5.624,-	6.358,-

## SCHEMATIC DIAGRAM



- 1) Delivery capacity [litres] at temperatures of 60°C tank, 10°C cold water, 45°C draw-off and 25°C tank return for the relevant max. draw-off rates (19, 28, 36, 48 l/min). Performance figures for one-off tank heating from 25°C to 60°C. The draw-off temperature at the draw-off point can vary depending on the pipe length, insulation and operating mode. For higher comfort levels, we recommend installing a DHW circulation pipe heater for the actual DHW circulation pipework. Limescale is dependent on the water quality. Increased limescale can be avoided by limiting the flow temperature to 55°C. For water hardness above 18°dH, we recommend using a descaling system. Descaling the plate heat exchanger is only possible to a limited extent; observe the relevant instructions.
- 2) Make sure the DHW circulation pump is sized sufficiently for the DHW circulation supply network. Type of DHW circulation pump: Grundfos UP 15-14B PM, max. delivery head: 1.2 m, max. delivery capacity: 0.8 m³/h



# FRESHWATER MODULES FOR LARGER PROJECTS

Freshwater modules with more than 40 litres delivery capacity are to be found in larger buildings, such as apartment blocks, hotels and public facilities, such as schools. The design, installation and operation of the DHW heating and distribution systems for such projects are regulated by numerous standards and regulations, e.g. ÖNORM B5019 and DVGW Code of Practice W 551. These regulations call, for instance, for a DHW circulation return temperature of at least +55°C for the operation of a drinking water network with DHW circulation.

Discharge temperatures of +60°C into the DHW network are usually required. This means that the system design must ensure that the DHW system is capable of meeting the parameters laid down in the relevant regulatory guidelines, in order to protect users from health problems and to avoid civil consequences. OCHSNER can only deliver the associated components for compliance with these requirements.

## Please note:

Regulations differ significantly throughout Europe, therefore before beginning system design and engineering, check the country-specific standards and regulations. The challenges for system installers: to comply with normative requirements at the lowest possible installation, operating and performance costs.

## Important:

The buffer temperature of +65°C or above must be reached to safeguard the necessary flow temperature of +60°C into the DHW network. You should therefore select a heat pump with an adequately high maximum flow temperature. The supplied thermal valve must also be adjusted correctly on site. Observe the delivery capacities of the freshwater modules at the targeted buffer tank and draw-off temperatures.

## DHW CIRCULATION IN LARGER PROJECTS

The DHW circulation pump can only be suitably sized in the course of project design. Therefore, the DHW circulation pump and its controller are to be supplied on site.

## LARGER PROJECTS – DESIGN REQUIREMENTS

The appropriate buffer volume is dependent on several factors: number of users, reheating source output, target buffer temperature, intensity of use (playing field with high simultaneity of draw-off, hotel in hiking area with mainly lower simultaneity, etc.) and the standard of sanitary fittings in the building (standard showers or overhead showers with increased delivery capacity). Take advantage of the OCHSNER service for support with system design.



## LARGE FRESHWATER MODULES

For convenient DHW heating with simultaneous optimum heat pump operation by means of heat pump buffer tanks: Minimum return temperatures, even in partial load operation; high delivery capacities with comparatively low buffer flow temperatures; with maximum temperature limitation in the buffer flow; and with injection switching for optimum buffer utilisation.

The heat exchanger is a “double-shell heat exchanger” and consists of two chambers in series. One chamber is the heat-up chamber and the other is the preheating chamber. The module therefore has two heat exchangers in series.

When a draw-off point is opened, the float switch in the cold water inlet is activated by the flow of water. This activates the buffer charging pump. Buffer water is then fed from the buffer tank into the module via the thermal mixing valve.

Commissioning the module is not complicated thanks to the primary thermal control construction: once the power supply has been set up, one to two main draw-off points are opened in the building and the thermal valve adjusted to the required DHW temperature.

## Important:

In many buildings, the DHW outlet temperature must be set to +60°C. Should the system be unable to achieve such high buffer temperatures, we recommend providing connections for external reheating sources.

<sup>1)</sup> If the buffer premix valve is set approx. 4 to 5K below the buffer temperature, low buffer return temperatures are also ensured in low load operation.

APPLIANCE TYPE	OFWM 62	OFWM 84
Order no.	920715	920716
Delivery class	II	II
Price € (incl. accessories)	5.412,-	6.038,-
Cold water and DHW connections	Heating: 1 1/4" male Sanitary: 1" male DN 25	Heating: 1 1/4" male Sanitary: 1" male DN 25
Power supply fully wired	230 V / 50 Hz	230 V / 50 Hz
Installation dimensions	600x697x700	600x755x700

## SPECIFICATION

Buffer temperature	+60°C	+65°C	+70°C	+75°C
T-premix	+55°C <sup>1)</sup>	+60°C	+65°C	+70°C
OFWM 62	+45°C: 55 l/min	+45°C: 62 l/min	+45°C: 72 l/min	+45°C: 72 l/min
OFWM 84	+45°C: 72 l/min	+45°C: 85 l/min	+45°C: 92 l/min	+45°C: 99 l/min

- Delivery capacity per buffer tank temperature and DHW temperature at full load operation, cold water inlet +10°C
- T-premix <sup>1)</sup> = DHW temperature in low load/DHW circulation operation

## INCLUDED WITH A FRESHWATER MODULE

Thermal extended double-shell heat exchanger, high efficiency energy saving pump, thermal valve on buffer tank adjustable from +30 to +70°C, robust flow switch, flushing aperture for freshwater, EPP insulating shell, on wall mounted bracket with fully wired controller. NOT supplied with the modules is the safety equipment necessary for the DHW side according to national and local standards and regulations.

The freshwater module is delivered ready to run hydraulically and electrically, including insulation, for wall mounting.

Connections:

- Heating side: 1 1/4" male
- DHW side: 1" male.

## SCHEMATIC DIAGRAM

The connection and controller for the DHW circulation pump must be supplied on site. The return from the DHW circulation system (B) is connected in the cold water inlet, upstream of the float switch (C). If the DHW circulation pump is running, the float switch is triggered and activates the module.

If the module is working solely for heating the DHW circulation system, high buffer return temperatures are inevitable. The buffer return

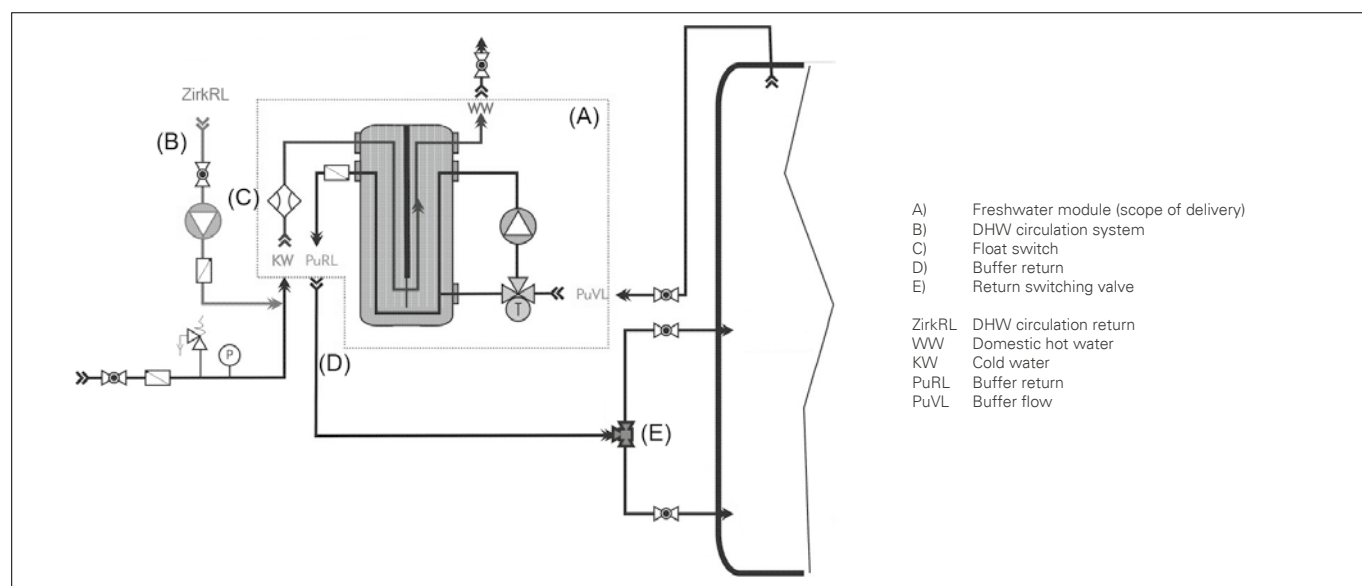
## OPTIONAL ACCESSORIES

	Models	Order no.	Price €
Buffer return switching valve 1 1/4"	OFWMRV	920717	190,-

## Important:

Observe the specifications of the applicable country-specific standards relating to DHW heating and operational parameters. For DHW temperatures above +60°C, ensure that there is scalding protection installed on the DHW side.

(D) cannot have a lower temperature than the water flowing in the DHW circulation return (B). These high return temperatures caused by DHW circulation operation will be diverted by means of the thermal return switching valve (E) into the correct buffer area. This optimises buffer use and the efficiency of the system. If DHW circulation re-heating is not carried out via the buffer tank (e.g. heat generator in the DHW circulation line), the DHW circulation return must be incorporated downstream of the freshwater module DHW outlet. This means that the float switch (C) is not activated.



# GENERAL ACCESSORIES

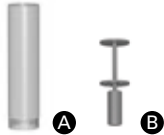
## HEATING PROTECTION FILTERS

To ÖN H5195 / VDI 2035

(service valves to be supplied on site; installation in heat sink system return upstream of buffer tank)



Heating protection filter with stainless steel filter 100 µm	1" kvs19	1 1/4" kvs23	1 1/2" kvs32	2" kvs35
Order no.	290610	290611	290612	290613
Price €	355,-	414,-	461,-	501,-



### ACCESSORIES:

Replacement filter, st. steel A	50 µm	100 µm	200 µm	500 µm
Order no.	914373	914374	914375	914376
Price €	55,-	55,-	55,-	55,-

Magnet insert for st. steel filter (optional) B	
Order no.	914377
Price €	124,-



Heating protection filter with stainless steel filter 100 µm incl. 2 pressure gauges excl. magnet insert	DN 50 PN 16	DN 65 PN 16	DN 80 PN 16	DN 100 PN 16	DN 125 PN 10	DN 150 PN 10
Order no.	290711	290712	290713	290714	290715	290716
Price €	1.449,-	1.914,-	2.399,-	3.120,-	4.166,-	5.201,-

### ACCESSORIES:

Filter casing C in flange design						
Order no.	914386	914392	914396	914400	914404	914409
Price €	866,-	1.230,-	1.590,-	1.982,-	2.787,-	3.548,-

Stainless steel filter 50 µm D						
Order no.	914387	914393	914397	914401	914405	914410
Price €	521,-	623,-	748,-	1.074,-	1.319,-	1.590,-

Stainless steel filter 100 µm D						
Order no.	914388	914394	914398	914402	914406	914411
Price €	521,-	623,-	748,-	1.074,-	1.319,-	1.590,-

Stainless steel filter 200 µm D						
Order no.	914389	914395	914399	914403	914407	914412
Price €	521,-	623,-	748,-	1.074,-	1.319,-	1.590,-

Pressure gauge set 0-4 bar E Glycerine-filled pressure gauge set						
Order no.	914391	914391	914391	914391	914391	914391
Price €	62,-	62,-	62,-	62,-	62,-	62,-

Magnet insert for st. steel filter F						
Order no.	914424	914424	914425	914426	914408	914413
Price €	93,-	93,-	93,-	222,-	440,-	487,-



## HIGH EFFICIENCY ENERGY SAVING CIRCULATION PUMPS

External for heat sink or heat source systems  
230 V



Type	Circulation pump 30	Circulation pump 40-1	Circulation pump 40-2	Circulation pump 50	Circulation pump 65-1	Circulation pump 65-2	Circulation pump 80
Order no.	922461	922347	922348	922349	922462	922829	922830
Price €	1.453,-	1.653,-	2.361,-	2.879,-	3.087,-	5.529,-	6.512,-

## SUBMERSIBLE PUMPS

The submersible pumps are multi stage 3" pumps with external inverter for demand-dependent flow adjustment. With integral soft start function, dry-run, overload and overheating protection.

### SCOPE OF DELIVERY:

- Inverter integrated in the submersible pump (set with mobile control unit)
- Steel rope
- 20 m cable



Submersible pump	I	II
Diameter [inches]	3	3
Order no.	290605	290606
Price €	1.290,-	1.806,-

### MOBILE CONTROL UNIT:

The mobile control unit is not supplied with the product as these are carried by OCHSNER customer service and are used only for calibration during commissioning. The settings are stored in the submersible pump's electronics.



### OPTIONAL COOLING ENCLOSURE:

Cooling enclosure to guarantee heat transfer in operation with larger drill wells and/or buried wells.

Cooling enclosure		
Phases / voltage [V] / frequency [Hz]	1/230/50	1/230/50
Order no.	290607	290607
Price €	336,-	336,-

# GENERAL ACCESSORIES

## ELECTRIC IMMERSION HEATER

(6/4" screw thread, with high limit safety cut-out)

- For installation in buffer tank or low loss header
- Suitable for mono energetic heating in combination with air/water heat pump
- Suitable for drying of construction moisture in geothermal systems
- Insulated fitting, galvanically separated
- Also suitable for drinking water



Material: INCOLOY 825

Type		Electric immersion heater 2.3	Electric immersion heater 3.0	Electric immersion heater 6	Electric immersion heater 9	Electric immersion heater 9 with LED + contactor
Output/rated voltage	kW / V	2.3 / 230	3.0 / 400	6 / 400	9 / 400	9 / 400
Installation length	mm	390	390	500	710	710
Order no.		922506	922507	922508	922509	922922
Price €		259,-	259,-	285,-	309,-	504,-

For applicability/installation length, see Unifresh, buffer tank and DHW tank tables

## PLATE HEAT EXCHANGERS

(water/water incl. hard-shell insulation without screw connections)



Material: 1.4401

Type		PHE 2007	PHE 5007	PHE 6007	PHE 9507	PHE 9609	PHE 9610
Dimensions (LxWxH)	mm	137 x 113 x 313	174 x 113 x 313	220 x 113 x 313	140 x 191 x 616	160 x 191 x 616	181 x 191 x 616
Connection – male thread	inch	4 x 1"	2 x 1" - 2 x 5/4"	2 x 1" - 2 x 5/4"	4 x 2"	4 x 2"	4 x 2"
Plate heat exchanger incl. insulation without threaded fittings	Order no.	911251	911252	911253	911316	911370	911340
	Price €	715,-	895,-	1.073,-	1.908,-	2.088,-	2.386,-
Wall bracket incl. 5/4" threaded elbow	Order no.	914366	914367	914367			
	Price €	174,-	181,-	181,-			
Screw connection 2" straight	Order no.				914368	914368	914368
	Price €				265,-	265,-	265,-

When sizing the heat exchangers, take into account the fact that the heat pump works with a correspondingly higher heat source temperature in summer, increasing the heat pump output accordingly. See page 140

## SENSOR POCKETS



For tanks		No coil	SP 350, SP 550 UNI 500, UNI 1000	UNI 800	UNI 800	UNI 500, UNI 1000
No. of sensors	pce	1	1	1	3	3
Connection diameter	inch	1/2"	1/2"	1/2"	1/2"	1/2"
Length	mm	210	100	150	150	100
Order no.		922564	922729	922421	922458	922731
Price €		15,-	15,-	15,-	15,-	15,-

## BRINE DISTRIBUTORS



Brine distributor set	2 circuits	3 circuits	4 circuits	5 circuits	6 circuits	7 circuits	8 circuits	9 circuits	10 circuits	
Connection dimension	1 1/2" fem., 1	1 1/2" fem., 1	1 1/2" fem., 1	1 1/2" fem., 1	1 1/2" fem., 1	2" fem., 1	2" fem., 1	2" fem., 1	2" fem., 1	
Length	mm	390	480	570	660	750	840	930	1020	1110
Order no.	916163	916164	916165	916166	916167	916168	916169	916170	916171	
Set price € without Taco-Setter	496,-	609,-	688,-	768,-	891,-	1.022,-	1.132,-	1.178,-	1.358,-	
Order no.	916324	916338	916339	916340	916341	916342	916343	916344	916345	
Set price € with TacoSetter	675,-	737,-	865,-	964,-	1.112,-	1.288,-	1.439,-	1.591,-	1.744,-	

## FROST PROTECTION CONCENTRATES



	Ethylene glycol based <sup>1)</sup>	O-Cool pro <sup>2)</sup>
Order no.	928153	928137
Price €	133,-	227,-

## SERVICE VALVES WITH FLUSHING NOZZLES

Installation suggestion for OWH 32, see page 137



Type	OWH 32	OWH 40	OWH 50
Qty [pce]	2	2	2
Dimensions	DN 32 x 1 1/4" fem.	DN 40 x 1 1/2" fem.	DN 50 x 2" fem.
Flushing nozzle	DN 32 x 1 1/4" male	DN 40 x 1 1/2" male	DN 50 x 2" male
Order no.	920654	920655	920656
Price €	280,-	517,-	677,-

## 3-WAY SWITCHING MODULE



Nominal width	DN 32 - 1 1/4"	DN 40 - 1 1/2"	DN 50 - 2"
kvs value	16	25	40
Order no.	290229	290341	290342
Price €	298,-	362,-	386,-

<sup>1)</sup> Price/canister – ethylene glycol based frost protection concentrate – pack unit 25 kg; 25% concentration → freezing point -14°C (recommended for all models due to improved viscosity)

<sup>2)</sup> Price/canister – O-Cool-Pro propylene glycol based frost protection concentrate with LD 0 environmentally friendly corrosion inhibitors – pack unit 25 kg; 32% concentration → freezing point -14°C





# OTS HOME CLIMATE MANAGER

NEW

## THE NEW HEAT PUMP CONTROLLER FROM OCHSNER

The OTS (OCHSNER TRONIC SMART) home climate manager is an innovative heat pump controller newly developed by OCHSNER. Through the interaction of the OTS with energy management, smart home and building management systems, the heat pump system becomes a key player in optimising energy costs and thereby reducing environmental impact. Current updates are transferred to your system through certified safety systems to improve the reliability and service life of your heat pump system and further boost its efficiency. The following OTS functions may differ depending on the product.

### USING THE OTS HOME CLIMATE MANAGER

- Controller on the indoor unit of the heat pump:
  - Capacitive touchscreen
  - Clear and intuitive to operate graphic user interface
- OTS app from OCHSNER for your smartphone (Android and iOS)

### FUNCTIONS AND OPERATING MODES

- Functions of an OTS control unit:
  - 4 heating/cooling circuits  
(more than 2 heating circuits: auxiliary module required)
  - 1 DHW circuit
  - 1 pool heater (optional)
  - Screed drying program
- Cascade solutions
- Standard heat metering<sup>1)</sup> via the flow meter, separate evaluation possible for:
  - Heating energy
  - Cooling energy
  - DHW heating energy
  - Defrosting energy
- Measuring and indication of system pressure
- Silent mode

### COMMISSIONING

- Software tool for the system installer (for activating pumps and 3-way switching modules, I/O testing)
- Quick and simple commissioning of the heat pump
- System configuration through the OTS system configurator with dialog-based commissioning assistant



## OPERATIONAL RELIABILITY

- Maximum operational reliability and maximum efficiency through OTS safety management (auto protect mechanisms before warnings or faults)
- Optimised refrigerant circuit control via model-based adaptive control
- Active monitoring of the refrigerant circuit and the integral system components
- System-optimised flow rate control (depending on operating mode)
- Continuous flow rate monitoring for the heat sink system through flow meters built into the heat pump
- Heat sink system pressure monitoring

## COMMUNICATION WITH THE HEAT PUMP <sup>2)</sup>

- Standard LAN connection
- Options for remote maintenance and system updates via encrypted internet connection
- Smart grid ready
- For commercial customers:
  - External control of heating circuits through a building management system via Modbus (RTU/TCP)
  - A buffer tank as a hydraulic interface
- Also for private customers:
  - For inclusion in a TCP-based smart home system via OCHSNER SDK (software development kit)
  - The heat pump itself always retains master control of heating circuits

## OTS ACCESSORIES

The OTS auxiliary modules are designed for wall mounting. Connection to the OTS controller takes place via a four-wire bus cable. The OTS auxiliary modules cannot be used for AIR FALCON 212 with MULTI TOWER (T200).

Auxiliary modules and assemblies	Order no.	Price €
Auxiliary module A (heating circuit with mixing valve) <sup>6)</sup>	290801	324,-
Auxiliary module B (multifunction) <sup>6)</sup>	290802	324,-
Assembly for DHW charging pump <sup>3)</sup>	290806	43,-

## OTS ROOM SENSORS

Hardwired room sensors	Order no.	Price €
Room temperature sensors	918379	91,-
Room temperature and humidity sensor	918380	119,-

## FUNCTIONS OF THE OTS HOME CLIMATE MANAGER

The table below describes the possible OTS controller functions. The basic functions can be expanded with auxiliary modules.

OTS CONTROLLER FUNCTIONS	Basic functions (without auxiliary module)		Auxiliary module A	Auxiliary module B
	AIR HAWK 208	AIR FALCON 212 <sup>6)</sup>	Heating circuit with mixing valve	Multifunction
Control of heat pump as heat generator	■	■		
Control of auxiliary heater (electric immersion heater) as heat generator	■	■		
Direct heating circuit 1		■		
Direct heating circuit or heating circuit with mixing valve 1	■			
Direct heating circuit or heating circuit with mixing valve 2	■	■		
Additional heating circuit with mixing valve			■	
Additional direct heating circuit (heating only)				■
DHW 3-way switching module <sup>3)</sup>	■	■		
Pressure sensor of the heat sink system	■	■		
DHW circulation pump	■			
DHW circulation pump (via optional accessories)		■		
Return temperature sensor for DHW circulation			■	■
Cooling signal "Cooling active" per heating circuit <sup>4)</sup>	■		■	
Global cooling signal <sup>5)</sup>		■		
DHW auxiliary heater				■
Pool heating, digital output and digital input				■
Additional energy generator (e.g. boiler, electric immersion heater), digital output				■

<sup>1)</sup> Limited accuracy (not suitable for billing)

<sup>2)</sup> OCHSNER only provides the essential interface functions. The system installer is responsible for incorporating the heat pump into an external system.

<sup>3)</sup> A separate assembly is required for the DHW charging pump (allows a high efficiency pump to be controlled as a DHW charging pump, in addition to the 3-way switching module).

<sup>4)</sup> A separate auxiliary module A is required for each heating circuit requiring a cooling signal. For AIR HAWK 208, this function is included as standard for two heating circuits.

<sup>5)</sup> E.g. buffer tank cross-connected via two 3-way switching modules for cooling mode or cooling signal for "cooling mode changeover" for external individual room control.

<sup>6)</sup> The OTS auxiliary modules cannot be used for AIR FALCON 212 with MULTI TOWER (T200).

# OTE HOME CLIMATE MANAGER

With regard to both maximum comfort as well as minimum running costs, heating, DHW heating and, as an option, cooling mode are fully automatically controlled with optimised heat pump use.

## OVERVIEW OF FUNCTIONS

- Plain text display on graphic display (multilingual)
- Remote control via web server (TCP/IP) only in conjunction with optional touchscreen (Accessories)
- System configurator for simple system configuration
- Safety management system (alarm/fault/outage) for optimal operational reliability
- Self-explanatory, dialogue-based use
- Active monitoring of the refrigerant circuit
- Self-optimised heating curve for demand-dependent adjustment of the heating curve optional
- Cascade OTE simple cascading; max. 8 heat generators + 16 consumer circuits + 8 DHW circuits
- Partial cascade OTE possible for simultaneous heating/DHW/pool and cooling by special parameter settings
- Permanent monitoring of flow rates via flow meters for heat sink and heat source supplied with heat pump (for heat sources brine and water)
- Separate heat metering possible for heating, cooling, DHW heating or defrosting energy in high capacity heat pump with air as the heat source, via flow meter fitted as standard

Access through internet-capable smartphone or tablet when using the remote controller with touchscreen.

## COMMUNICATION WITH THE HEAT PUMP 1)

### • Smart grid ready applications:

- Function for on-site photovoltaic consumption: Higher DHW, heating and cooling mode temperatures can be set. These take effect when a digital "energy present" signal is passed from the inverter to the OTE (no auxiliary module required).
- Function with four different operating states: Externally locked (by the power supply utility), standard mode, priority mode, forced draw-off. If this function is used, an auxiliary module is required.

### • Analogue signal (0-10 V) for integration into a building management system

- Possible as standard for AIR or TERRA DX
- For TERRA or AQUA: auxiliary module SE 6304 required

### • OTE Modbus gateway

- The gateway can be used for all On/Off heating heat pumps with OTE-3 controller<sup>5)</sup>. Two modes are available.
- 1. Integration into a building management system: the hydraulic interface is the buffer tank, and the entire heat sink must be controlled from the building management system.
- 2. Smart home interface: in this mode, only target and actual values of the heat generator can be read out. Control and settings are still carried out via the OTE master controller.
- Retrofitting is only possible for systems with OTE-3 controller<sup>5)</sup>. This requires a customer service visit and recommissioning of the heat pump.

## CONTROL ELEMENTS

### MASTER CONTROLLER

in control panel of heat pump



Illustrative photo

### REMOTE CONTROLLER

with graphic display and humidity sensor (white)

Order no. 918357



Illustrative photo

### REMOTE CONTROLLER WITH TOUCHSCREEN

Capacitive touchscreen with integral web2com server (available as an option)

Order no. 918255



Illustrative photo

## INDIVIDUAL SOLUTION

Simple connection via OTE controller bus cable of a heat pump via one or more auxiliary modules for the control of additional boilers, DHW heaters and consumer circuits for heating/cooling.



	Basic functions (without auxiliary module)	Auxiliary module SE 6304	With further aux- iliary modules for max.
Heat generator	1	1	8
Heating circuit (direct)	1	–	1
Heating circuit (mixed) for heating/cooling	1	2 4)	15
DHW circuit	1	1	8

## CASCADE SOLUTION

Simple connection via OTE controller bus cable of several heat pumps via one or more auxiliary modules for the control of additional boilers, DHW heaters and consumer circuits for heating/cooling.



Auxiliary module (illustrative photo)  
Order no. 290197

	OTE MASTER	OTE SLAVE	Auxiliary module	For maxi- mum
Heat generator	2	2	1	8
Heating circuit (direct)	1	1	–	1
Heating circuit (mixed) for heating/cooling	1	1	2 4)	15
DHW circuit	1	1	1	8

## OPTIONAL ACCESSORIES

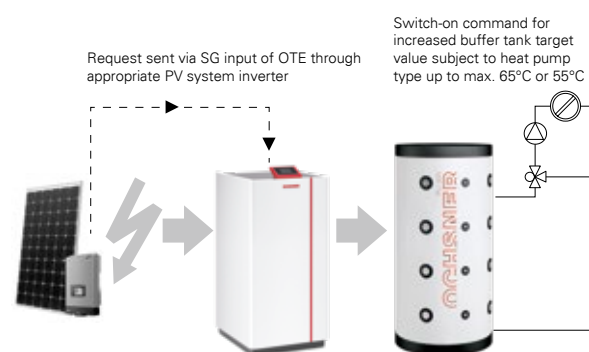
	Order no.	Price €
Remote controller FB 6104 RH with graphic display and moisture sensor 2), white	918357	280,-
Remote controller with touchscreen and integral web2com server	918255	914,-
Room temperature and humidity sensor FT 6224	930303	211,-
Auxiliary module SE 6304 OGZ 3 incl. sensor set (2x contact sensors + 1x cable sensor for sensor pocket), control of 2nd and 3rd mixed circuit, control of swimming pool heating system, control of auxiliary heater (boiler, electric)	290695	650,-
Surcharge for passive cooling with heat source water/brine incl. FB 6104 RH and contact sensor 3)	980155	332,-
Control unit for central heat source pump for cascading AQUA, 1 pce per cascade	290526	101,-
Switching relay for 1x buffer heating and 1x buffer cooling or buffer cross-connection	290503	166,-
OTE Modbus gateway ZIF180 5)	918427	515,-

- 1) OCHSNER only provides the essential interface functions. The system installer is responsible for incorporating the heat pump into an external system.  
2) Included in surcharge for heat pump heating/cooling for 1st mixed circuit. An additional room remote control (918357) is required for every further cooling circuit (mixed circuit).  
3) For passive cooling (without active cooling), an additional remote control (918357) is required for every further cooling circuit (mixed circuit) from the 2nd cooling circuit onwards. This part is already included when ordering a passive cooling set.  
4) Per circuit for heating/cooling via an auxiliary module, an OTE output for either an additional heat generator or additional DHW circuit cannot be used.  
5) The OTE Modbus gateway cannot be used for AIR EAGLE (OTE-4 controller).

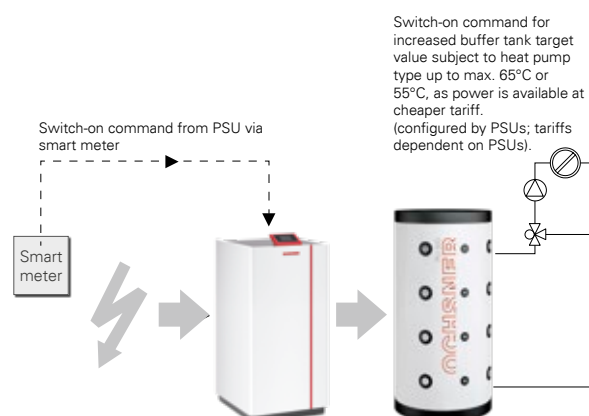
### STANDARD OPERATION SMART GRID FUNCTION NOT ACTIVE



### OPERATION USING PV POWER GENERATED ON SITE



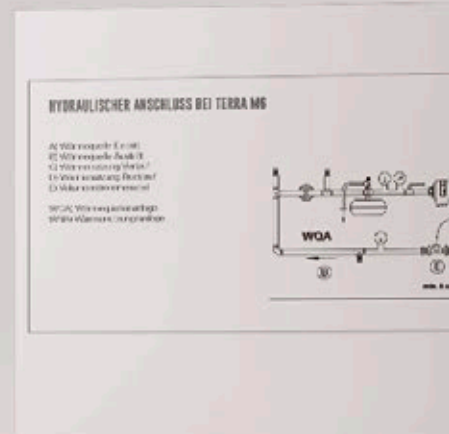
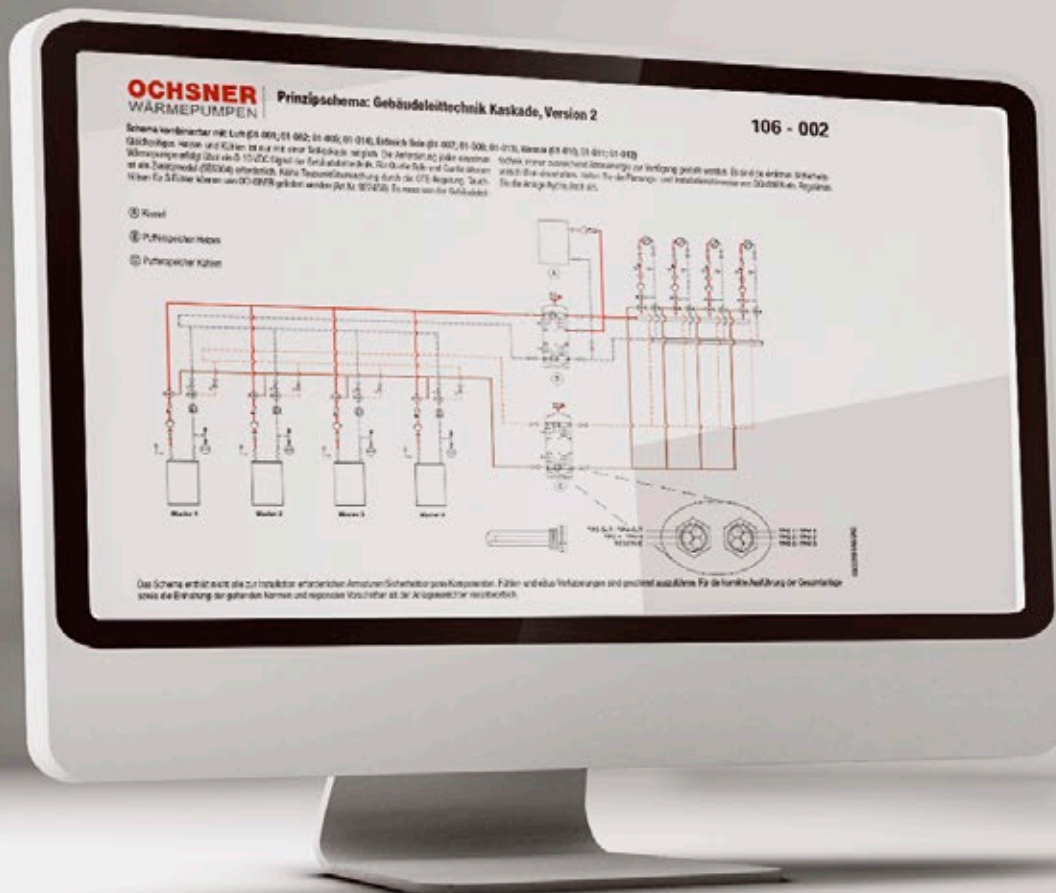
### SMART GRID OPERATION WITH SURPLUS POWER FROM RENEWABLE ENERGY



PV = photovoltaics  
PSU = power supply utility  
SG = smart grid



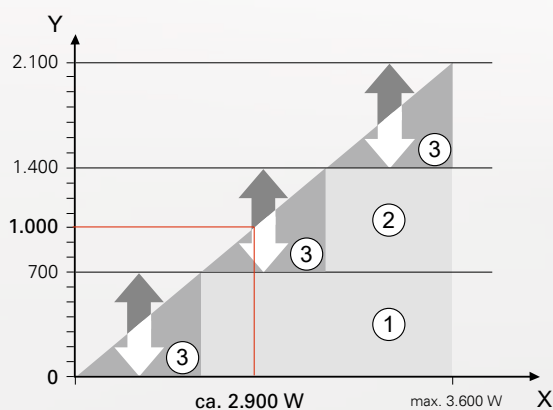
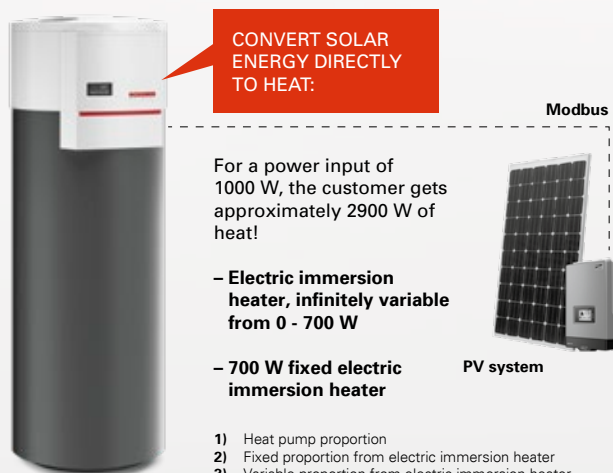
# ENGINEERING AND INSTALLATION INFORMATION



# DESIGNING HOT WATER HEAT PUMPS

## OPTIMISED CONSUMPTION OF PV POWER GENERATED ON SITE WITH THE EUROPA 333 GENIUS

- Through the combination with infinitely variable electric immersion heater (0 to 2100 W) integrated as standard
- PV electricity can be used straight away!
- Only in combination with building management and smart home systems
- Integration of the hot water heat pump as slave in a higher ranking system via Modbus
- The surplus power is transferred from the higher ranking system to the hot water heat pump via Modbus



X = heating output [W]  
Y = output of the photovoltaic system [W]  
PV = photovoltaics



# GENERAL INFORMATION ABOUT EUROPA HOT WATER HEAT PUMPS

An excerpt from the operating and installation manual for EUROPA hot water heat pumps is reproduced below. For detailed engineering and installation information for hot water heat pumps, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

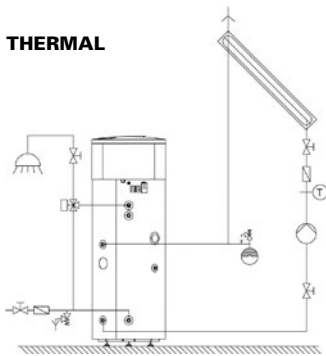
Depending on requirements, DHW heat pumps can be installed in both new and existing systems for optimum and economical DHW heating.

- The output and/or COP of the heat pumps is dependent on air temperature, air flow and humidity.
- Performance figures: Constructional tolerance of  $\pm 10\%$ .
- When using for mechanical ventilation, we recommend using a pipework silencer installed by the customer.
- The Tiptronic Plus and Tiptronic Plus S control units feature a ventilation circuit.

- DHW heat pumps EUROPA 333 GENIUS and EUROPA 250 DK have an auxiliary coil for connection to a solar thermal system or for combination with a pellet system or boiler.
- We recommend installing a descaling system in hard water areas. Machine failure due to poor water quality voids any warranty or guarantee.
- DHW heat pumps are intended solely for DHW heating and not for room heating.

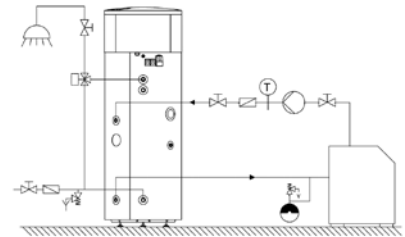
## CONNECTION TO A SOLAR THERMAL SYSTEM:

- EUROPA 333 Genius
- EUROPA 250 DK (on-site solar controller required)



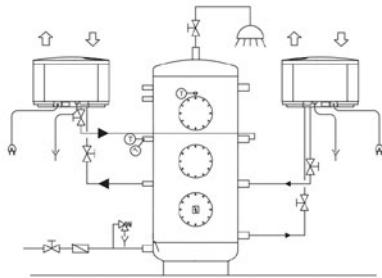
## CONNECTION TO A BOILER:

- EUROPA 333 Genius
- EUROPA 250 DK

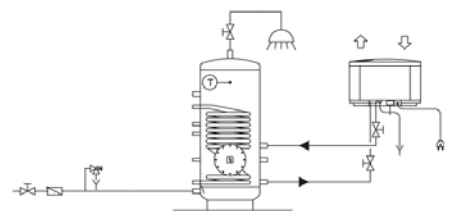


## TWIN SOLUTION

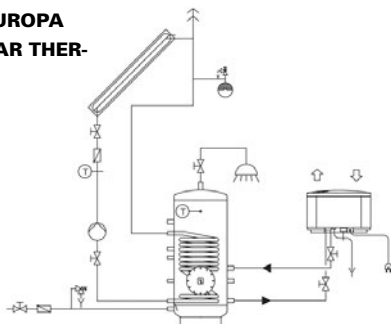
- EUROPA Mini IWP
- EUROPA Mini IWPL



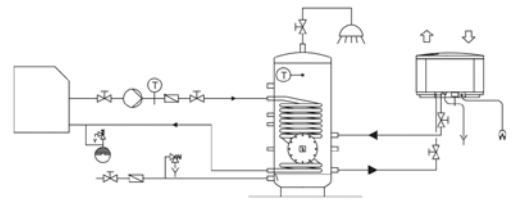
## DHW TANK WITH EUROPA MINI IWP/IWPL AND VARIOUS HEAT SOURCES



## DHW TANK WITH EUROPA MINI IWP AND SOLAR THERMAL SYSTEM



## DHW TANK WITH EUROPA MINI IWP AND BOILER

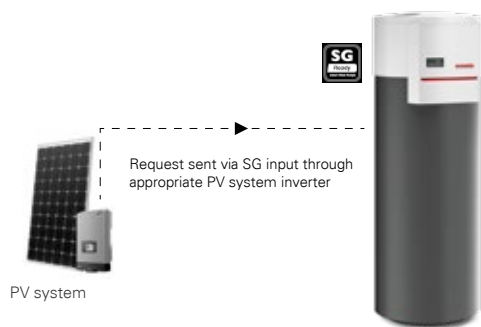




## EXAMPLES OF APPLICATION

### REQUIREMENTS FOR PHOTOVOLTAIC POWER GENERATION ON SITE THROUGH SMART GRID INPUT:

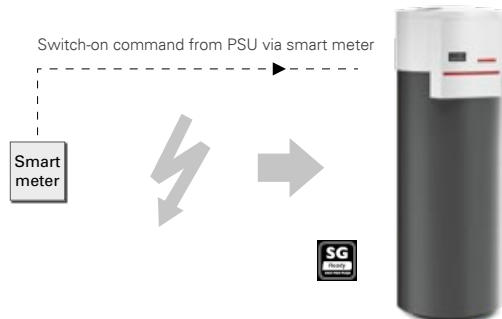
- EUROPA 333 Genius
- EUROPA 300L
- EUROPA Mini IWP



Switch-on command at higher target value as power is free, e.g. 60°C (up to 65°C is possible).

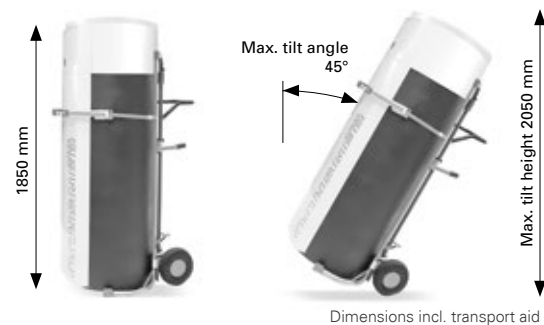
### SMART GRID OPERATION WITH SURPLUS POWER FROM RENEWABLE ENERGY:

- EUROPA 333 Genius
- EUROPA 300L
- EUROPA Mini IWP



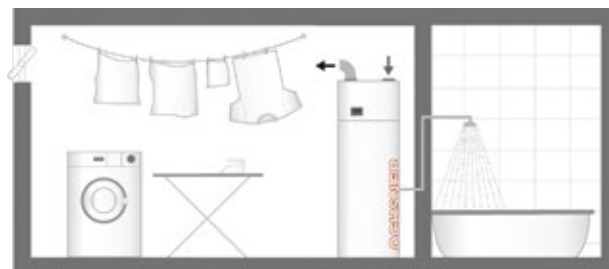
Switch-on command at higher target value, e.g. 60°C (up to 65°C is possible), as power is available at low tariff (configured by PSUs; tariffs dependent on PSUs).

### TRANSPORT AID FOR EUROPA DHW HEAT PUMPS



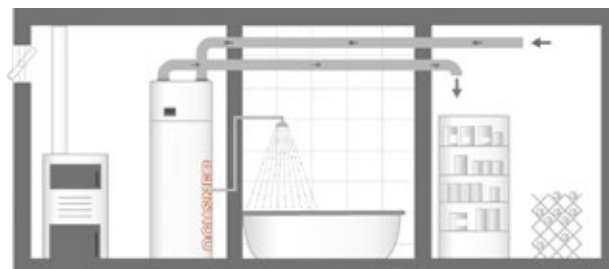
PV = photovoltaics  
PSU = power supply utility  
SG = smart grid

### INSTALLATION IN A LAUNDRY ROOM



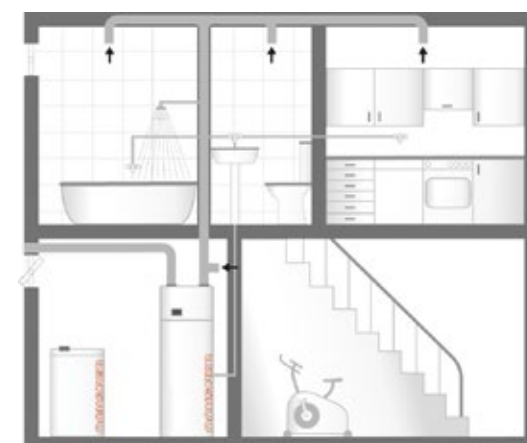
- The room air from the laundry room is drawn in and blown out (no air routing)
- Utilisation of waste heat from household appliances and dehumidification of room air
- Only possible during simultaneous heat pump operation

### COOLING OF PANTRY/STORAGE ROOM



- The room air is drawn in from the pantry/storage room and blown out (recirculation air mode)
- Cooling effect and dehumidification of room air
- Only possible during simultaneous heat pump operation

### EXHAUST AIR SYSTEM



- The room air is drawn in from the wet rooms or partly from the installation room (after-flow of air via supply air apertures, e.g. gaps in door, necessary)
- The air is blown outdoors (overpressure shut-off flap required)
- During DHW charging, the heat pump regulates back to your nominal air flow rate

# DESIGNING HEATING HEAT PUMPS

## HEATING AND COOLING WITH ENERGY FROM THE ENVIRONMENT

### SIZING THE SYSTEM IN ACCORDANCE WITH STANDARD POINT(S)

Compliance with the nominal flow rates is essential for effective and safe operation. The required flow meters (FM) suitable for the home climate manager are therefore supplied with the heat pump.

When sizing horizontal geothermal collectors or probe systems, particularly in the low output range, we recommend sizing the heat source based on the heating output at the standard operating point.

The pipe cross-sections of the heating system should be sized according to the residual head and should take into account pipe friction losses and individual resistance.

### PERFORMANCE FIGURES

The performance figures refer to data measured for heat pumps under standard conditions (heating output, COP), taking into account the specified tolerances. The energy efficiency, and therefore the running costs, of the system are the responsibility of the system installer. Heat pump heating systems must be installed in accordance with OCHSNER guidelines. No functional warranty for the heat pump can be provided for systems that are not installed in accordance with these guidelines. OCHSNER therefore recommends that the heat pumps are installed by trained OCHSNER system partners.

- The performance figures according to EN 14511 with a spread of 5K do not take the circulation pumps into consideration.
- All specifications have a tolerance of 10%.
- The cooling performance figures have a tolerance of up to 25%, depending on operating conditions and system characteristics.

Even if a system has been installed in accordance with OCHSNER guidelines, efficiency values obtained in the field may deviate from factory data, as the latter is based on measurements taken under standard conditions. In addition, user behaviour and the relevant design of the connection line also play a critical role.



### „CLIMATE“ HEAT PUMP – HEATING/COOLING

- Full heating mode in winter, full output for active cooling (via refrigerant circuit reversal) for cooling in summer
- Optimum performance and operational reliability thanks to more than 15 years of experience in wall, floor and fan coil systems.
- Heat pumps fitted with their own injection system assembly for efficient cooling mode.
- Possible energy sources: air, water, brine
- Home climate manager regulates cooling mode and provides fully automatic changeover between heating and cooling.
- A heat pump buffer tank is always required for heat pumps without speed control in cooling mode. To improve stratification in cooling mode, cross-connecting via the tank connections is recommended.
- The version with a low loss header is not suitable for cooling mode.

### REFRIGERANTS USED

OCHSNER only uses non-explosive refrigerants of low flammability that comply now and in the foreseeable future with the GWP requirements of the F-gas Regulation.

For heat pumps installed indoors, depending on the refrigerant type and fill weight, national regulations and standards specify the required minimum area of clear floor space in the installation room.

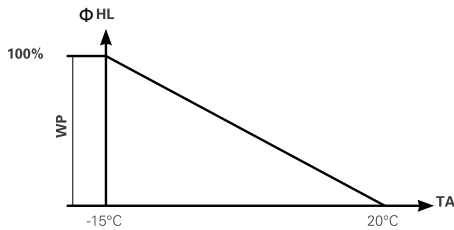
Machine-specific information can be found in our technical guides.

## SIZING AND OPERATING PRINCIPLE OF HEATING HEAT PUMPS

The following operating modes are possible:

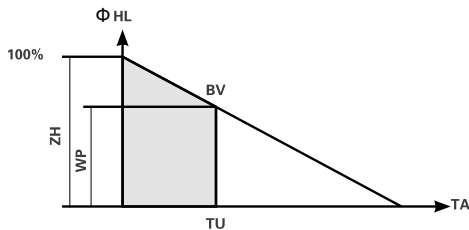
### MONOVALENT

**The heat pump is the only heat generator.** The heat pump covers 100% of the heat demand at all times. Suitable for flow temperatures of up to 55°C or 65°C. Systems with ground or water as the heat source are operated in monovalent mode (max. design temperature of heat distribution system 50°C or 60°C).



### BIVALENT – ALTERNATIVE

**The heat pump provides heat on its own up to the changeover point.** Once the changeover point has been passed, the boiler provides heat on its own. A boiler can be incorporated in order to achieve flow temperatures up to 90°C. Used predominantly when retrofitting in existing systems.



HL	Heat load of system incl. supplement for outage times and DHW
WP	Output of heating heat pump
ZH	Output of additional heat generators
TA	Outdoor temperature or standard outdoor temperature
TE	Auxiliary heater switch-on point
TU	Heat pump switch-off point
BV	Bivalent point

### Notes on noise

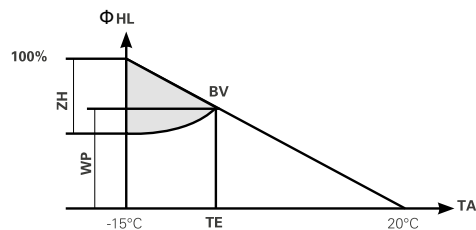
Heat pump installation room: not next to living areas, not in light-weight construction. The heat pump installation should be sound insulated with noise reducing underlay and flexible connection hoses.

### Low loss header

Variable flow rates on the heat sink side are only possible with the use of heat pump buffer tanks; individual room controls with a low loss header is therefore not permitted.

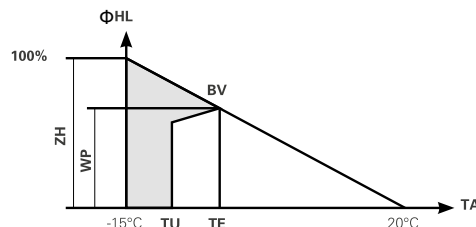
### BIVALENT – PARALLEL

**The heat pump provides heat on its own up to the switch-on point.** Once this point has been passed, the heat pump provides heat together with the boiler or the electric immersion heater. Max. flow temperature 65°C. Used predominantly in new systems with air as the heat source or when converting the heating system as part of the renovation of an older building (caution: observe limits of use).



### BIVALENT – PARTIAL PARALLEL

**The heat pump provides heat on its own up to the switch-on point.** Once this point has been passed, the heat pump and the auxiliary heat generator (HG) operate in parallel to provide heat. Once the heat pump's switch-off point has been passed, the auxiliary HG provides heat on its own. The auxiliary HG is therefore sized to provide 100% of the heating output. The same applies to the electric immersion heater if an air/water heat pump is operated in mono energetic mode.



# GENERAL INFORMATION ABOUT ON/OFF AIR/WATER HEAT PUMPS

- A buffer tank must be installed to provide defrosting energy.
- For the building frost protection function, an electric immersion heater is required in the buffer tank.
- Take the flow rates for DHW heating into consideration
- For systems with cooling function, ensure that suitable pipework insulation is installed to prevent the formation of condensate.
- To protect the fan from environmental effects such as rain, snow, leaves, etc., the snow cover for split outdoor units is available as an accessory.
- For operational reliability, especially in defrosting and/or cooling mode, it is important that the hydraulic safety and pressure maintaining devices are sufficiently sized.
- Ensure an annual inspection of the system according to national and regional regulations.
- As a rule of thumb: system charge pressure for heating and cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]

## SOUND EMISSIONS

The sound power emitted by the outdoor unit is constant. The emission level is expressed in terms of the sound pressure level as measured from a certain distance. This depends on local conditions. In accordance with VDI 2058, the following values may not be exceeded at the open window of a neighbouring property (day/night sound pressure level):

- Commercial/residential areas 60 dB(A) / 45 dB(A)
- General residential areas 55 dB(A) / 40 dB(A)
- Exclusively residential areas 50 dB(A) / 35 dB(A)

OCHSNER outdoor units lie some way below these values. The sound pressure level measured at 1 m distance in a free field is approx. 8 dB below the sound power level. Here, the sound pressure level decreases by approx. 2 dB(A) per metre. Observe the information in the TA-Lärm (technical instructions on sound abatement) and the BWP code of practice on sound emissions.

### Make sure you lay the refrigerant lines in such a way as to minimise noise emissions:

- Ensure that the refrigerant lines are installed in a way that ensures insulation from structure-borne noise.
- The refrigerant in the lines can generate noise under certain operational conditions.
  - AIR M2/M4: Avoid routing the lines in the vicinity of bedrooms.
  - AIR M6: Avoid routing the lines through living and office rooms.

If the appliance, the refrigerant lines, the pipe fixings and the wall conduits are not installed correctly, structure-borne sounds can be transmitted to the building. This is the responsibility of the system installer.

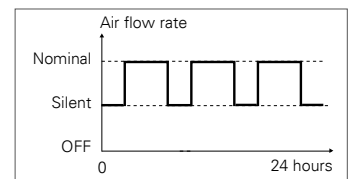
## SUPER SILENT PACKAGE (SSP)

The Super Silent Package ensures additional noise reduction by -3 dB(A) with outdoor units for AIR 7 - AIR 41. The Super Silent Package consists of:

- One cylindrical silencer per fan
- Reinforced casing insulation
- Sound-insulated refrigeration technology

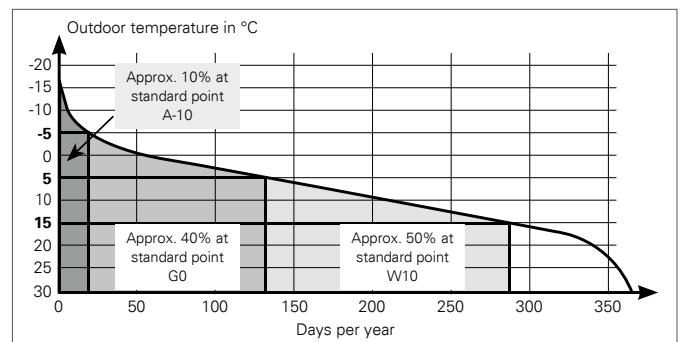
## SILENT MODE

Silent mode offers four separate time windows during which the outdoor unit can be operated with reduced sound levels. It is set via the OTE controller.



## ORDERED ANNUAL LOAD CURVE

Provides the number of days on which the outdoor temperature falls below a defined value.



## DHW HEATING

The OCHSNER heating heat pumps can also provide DHW heating for your home. For this, the heating heat pump must provide additional output.

- A guide value for sizing the additionally required output in detached houses is 0.25 kW per person in the household.
- For larger projects, such as apartment buildings or swimming pools, DHW heating must be sized separately according to actual demand. We would be pleased to advise you with any questions relating to sizing.

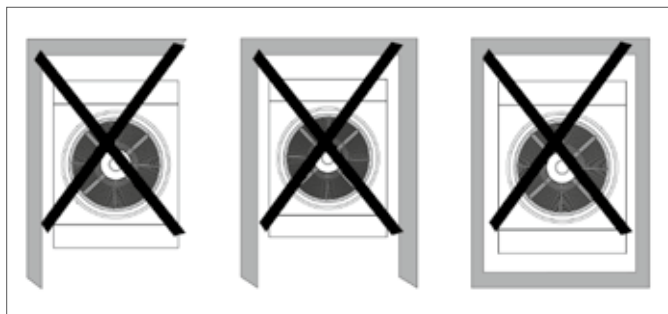


# ENGINEERING AND INSTALLATION INFORMATION: AIR M2/M4/M6

An excerpt from the operating and installation manual for AIR M2/M4/M6 is reproduced below. For detailed engineering and installation information for air/water heat pumps, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

## OUTDOOR UNIT INSTALLATION LOCATION

The outdoor unit is intended to be installed only out of doors.



Please note the following with regard to sound emissions from the outdoor unit:

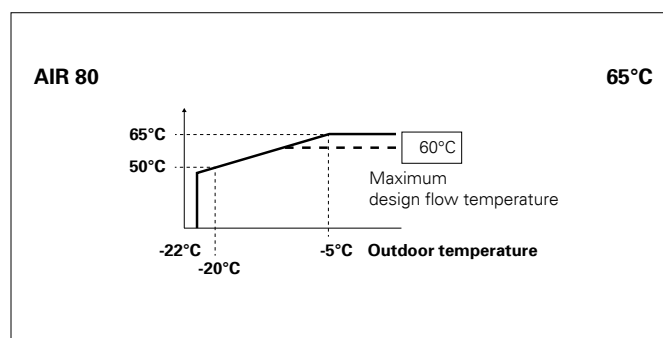
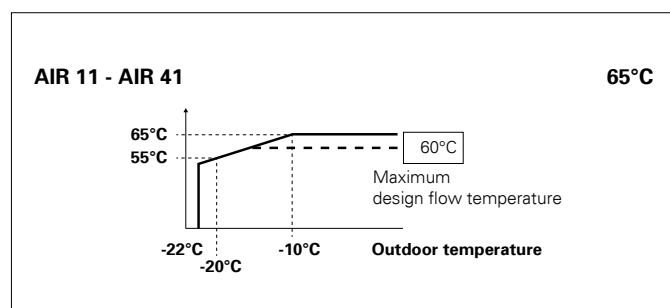
- Avoid installing on reverberant flooring.
- Avoid installing between building walls. Walls can increase the noise level.
- Avoid installing next to bedrooms.

Plants and cultivated areas around the outdoor unit, subject to minimum clearances, can reduce the noise level of the outdoor unit.

## CONNECTION LINES BETWEEN INDOOR AND OUTDOOR UNITS

- Lay the refrigerant lines and the fan power supply in a pipe liner.
- Observe the regulations regarding thermal insulation and laying in pipe liners (condensate drainage, etc.).
- The pipe liner (smooth inner walls) must have an adequate inner diameter (depending on the connection line) and must be laid with a large bending radius (more than 1 m). 90° bends are not permitted. The recommended minimum pipe liner diameters can be found in the technical guides from OCHSNER.
- Connection to the outdoor unit must be carried out by OCHSNER customer service or authorised OCHSNER customer service partners.
- Ensure that the refrigerant lines are installed in a way that ensures insulation from structure-borne noise.
- Select the installation sites for the indoor and outdoor units so that the maximum permissible line lengths and height differentials are observed.
- Avoid routing the lines in the vicinity of bedrooms. The refrigerant in the lines can generate noise under certain operational conditions.

## LIMITS OF USE: AIR M2/M4/M6



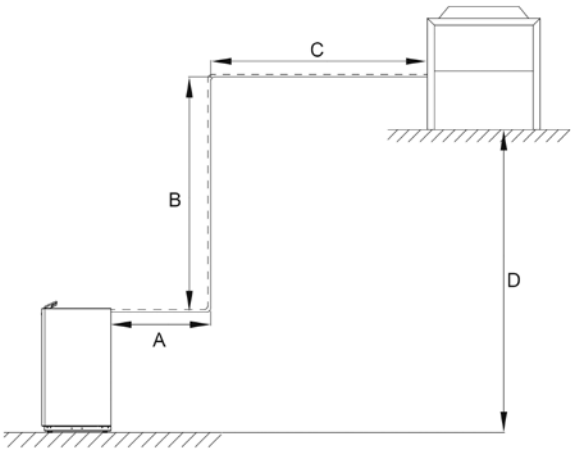
Application	Auxiliary heater output
Bivalent parallel	Sized according to calculated value (quotation program), but with minimum 50% of building heat load
Bivalent partial parallel	Sized to 100% of building heat load
Bivalent alternative	Sized to 100% of building heat load



LINE LENGTHS: AIR M2/M4/M6

- Observe the maximum permissible line lengths for the refrigerant lines.
- Observe the maximum permissible height differential between the indoor and outdoor units.

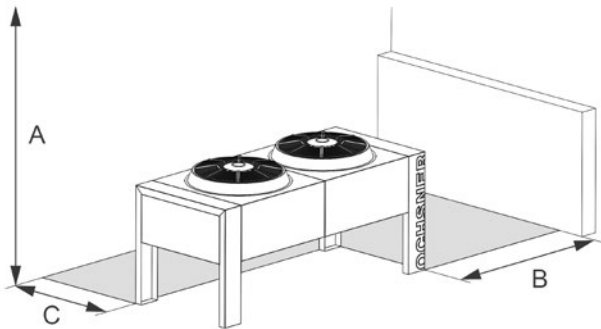
	A + B + C Sum of line lengths	D (max. height differential)
AIR 11 - AIR 29	≤ 20 m	≤ 10 m
AIR 41 - AIR 80	≤ 16 m	≤ 5 m



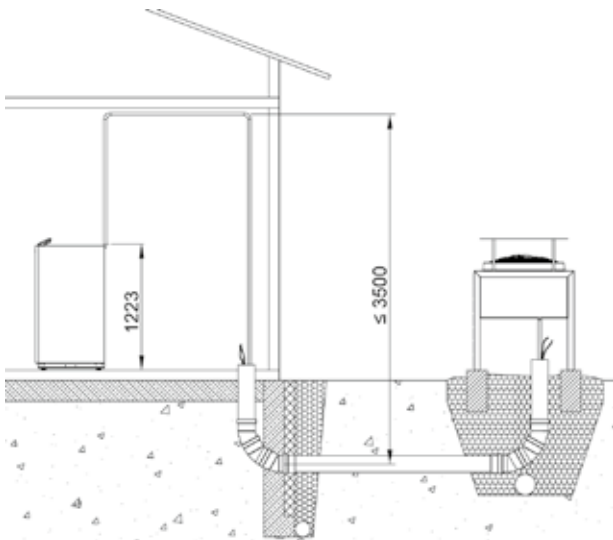
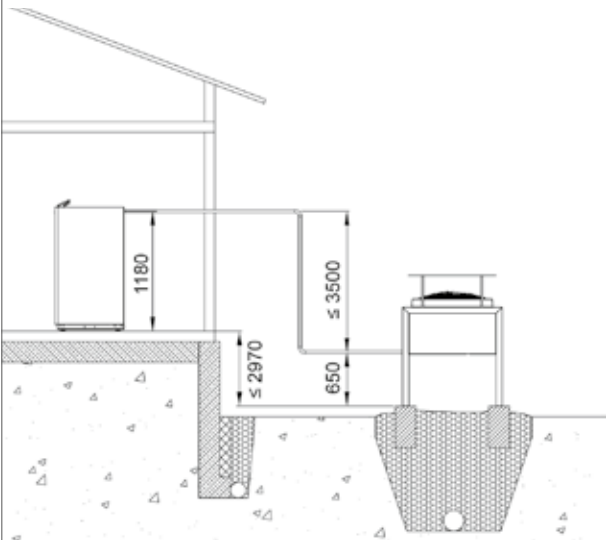
MINIMUM CLEARANCES FOR OUTDOOR UNIT: AIR M2/M4/M6

- It is permissible to install the outdoor unit under a roof if the space around the unit is permanently open on three sides.
- The minimum clearance between two outdoor units is:
  - AIR 11 - AIR 41: 1000 mm on all sides (e.g. in case of cascade systems or AIR MULTI)
  - AIR 80 C13A: 3000 mm on all sides
  - AIR 80 C22A: 1000 mm on all sides

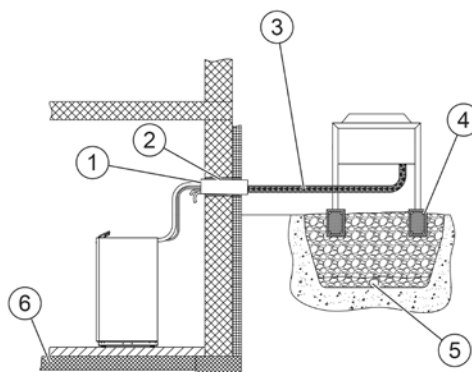
A	≥ 3000 mm (minimum clearance to roof)
B	≥ 1000 mm (minimum clearance to a wall)
C	100 mm or ≥ 1000 mm (minimum clearance to a wall from the long side)



HEIGHT DIFFERENTIALS: AIR M2/M4

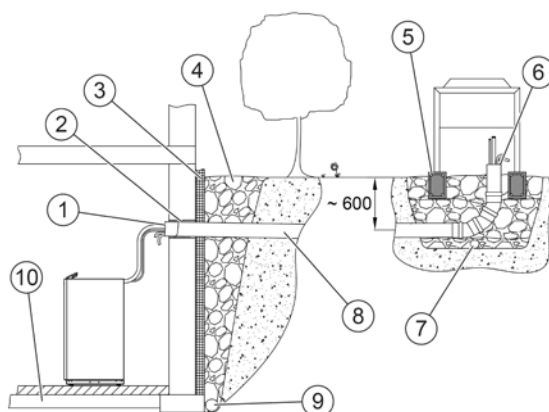


## REFRIGERANT LINES PASSING THROUGH OPEN AIR



- 1) Appropriately sealed wall conduit (particularly where there is a risk of flooding)
- 2) Appropriate sealing of the refrigerant lines as they pass through the wall conduit
- 3) Refrigerant lines in open air (enclosed in thermal insulation with UV protection)
- 4) Reinforced strip foundation
- 5) Drainage pipe (frostproof)
- 6) Foundation

## UNDERGROUND REFRIGERANT LINES

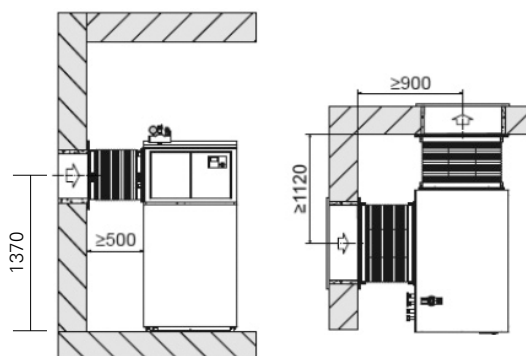


- 1) Appropriately sealed wall conduit
- 2) Appropriate sealing of the refrigerant lines as they pass through the pipe liner
- 3) Insulation
- 4) Gravel
- 5) Reinforced strip foundation
- 6) Appropriate sealing at the end of the pipe liner (between refrigerant lines and pipe liner)
- 7) Drainage pipe (frostproof)
- 8) Pipe liner (with min. 2% fall to outside)
- 9) Drainage
- 10) Foundation

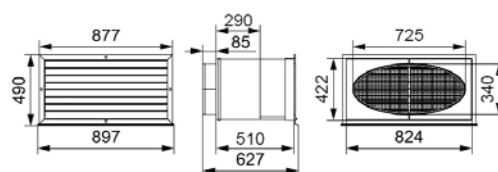
# ENGINEERING AND INSTALLATION INFORMATION: AIR STATION

## AIR STATION: INDOOR INSTALLATION

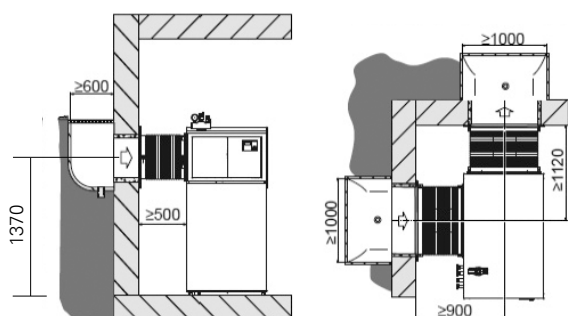
### Air routing without shaft, through two external walls around one corner



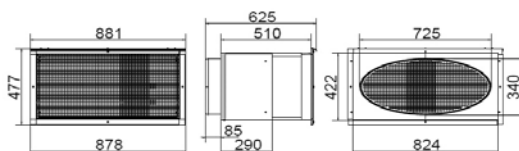
#### Wall conduit AWG 560 H



### Air routing with shaft, through two external walls around one corner



#### Wall conduit AWG 560 L



# SIZING THE HEAT SINK SYSTEM: AIR M2/M4

## FOR HEAT PUMPS WITH AIR AS HEAT SOURCE

**M2**

Unit type	AIR 11			
Connection dimension	inch	DN 32 1 1/4" male		
WNA circulation pump	Yonos Para HPS 25/7.5			
	Internal			
Pump delivery head	mbar	651	762	774
Spread at A2/W35	K	5	7	10
Flow rate	m³/h	1,7	1,21	0,85
		100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	205	104	51
Internal pressure loss M4-4	mbar	-	-	-
Residual head I M2-1; M4-1	mbar	446	658	722
Residual head I M4-4 for cascade	mbar	-	-	-
Additional 3-way switching module	mbar	External DN32 kvs16		
Pressure loss	mbar	11	6	3
External PHE for DHW	PHE 2007 A=1" B=1"			
Primary pressure loss, side A (HP)	mbar	65	33	16
Secondary pressure loss, side B (DHW)	mbar	72	37	18

## LIMITS OF USE

Unit type	AIR 11			
		5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)				
tf-max HP heating	°C	65	65	65
tf-max WNA heating	°C	60	60	60
tf-max DHW A2/W65	°C	60	59	57
tf-max HP cooling	°C	7	10	13
tf-min WNA cooling	°C	9	12	15
Limits of use: minimum outdoor temperature te-min as a function of max. flow temperature tf-max				
	tf-max	te-min		
LT heating	35°C	-23°C		
	45°C	-23°C		
	50°C	-23°C		
MT heating	55°C	-20°C		
HT heating or DHW	60°C	-15°C		

HP = heat pump  
PHE = plate heat exchanger  
DHW = domestic hot water

WNA = heat sink system  
LT = low temperature  
MT = medium temperature

HT = high temperature  
male = male thread  
kvs = kvs value

**M2****M4**

Unit type	AIR 18					AIR 23		
Connection dimension	inch	DN 32 1 1/4" male					DN 40 1 1/2" male	
WNA circulation pump	Yonos Para HPS 25/7.5					Stratos Para 25/1-8		
	Internal					Internal		
	Pump delivery head	mbar	499	611	690	766	686	728
Spread at A2/W35	K	5	6	7	10	5	7	10
Flow rate	m³/h	2,2	1,83	1,57	1,1	3,4	2,43	1,7
		100%	83%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	324	225	165	81	330	168	82
Internal pressure loss M4-4	mbar	-	-	-	-	234	120	59
Residual head I M2-1; M4-1	mbar	175	386	525	685	356	560	643
Residual head I M4-4 for cascade	mbar	-	-	-	-	452	609	667
Additional 3-way switching module	mbar	External DN32 kvs16					External DN40 kvs25	
Pressure loss	mbar	19	13	10	5	18	9	5
External PHE for DHW	PHE 5007 A=1 1/4" B=1"					PHE 5007 A=1 1/4" B=1"		
Primary pressure loss, side A (HP)	mbar	20	14	10	5	37	19	9
Secondary pressure loss, side B (DHW)	mbar	26	18	13	7	48	24	12

## LIMITS OF USE

Unit type		AIR 18				AIR 23		
		5K	6K	7K	10K	5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)								
tf-max HP heating	°C	65	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60	60
tf-max DHW A2/W65	°C	60	59,5	59	57	60	59	57
tf-max HP cooling	°C	7	8	10	13	7	10	13
tf-min WNA cooling	°C	9	10	12	15	9	12	15
Limits of use: minimum outdoor temperature te-min as a function of max. flow temperature tf-max								
	tf-max	te-min				te-min		
LT heating	35°C	-23°C				-23°C		
	45°C	-23°C				-23°C		
	50°C	-23°C				-23°C		
MT heating	55°C	-20°C				-20°C		
HT heating or DHW	60°C	-15°C				-15°C		

# SIZING THE HEAT SINK SYSTEM: AIR M4/M6

## FOR HEAT PUMPS WITH AIR AS HEAT SOURCE

Hydraulic versions			Electric immersion heater		3-way switching module	
			Internal	external	Internal	external
M2-1	M4-1		x		x	
M2-2	M4-2			x	x	
M2-3	M4-3		x			x
M2-4	M4-4	M6		x		x



M4

Unit type	AIR 29					AIR 41		
Connection dimension	inch	DN 40 1 1/2" male				DN 50 2" male		
WNA circulation pump		Stratos Para 25/1-8				Stratos Para 25/1-12		
		Internal				Internal		
Pump delivery head	mbar	577	714	727	929	1052	1139	1124
Spread at A2/W35	K	5	7	10	5	6	7	10
Flow rate	m³/h	4,4	3,14	2,2	6	5,00	4,29	3
		100%	70%	50%	100%	83%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	464	237	116	820	569	418	205
Internal pressure loss M4-4	mbar	304	155	76	523	363	267	131
Residual head I M2-1; M4-1	mbar	113	478	611	109	482	721	931
Residual head I M4-4 for cascade	mbar	273	559	651	406	689	873	1005
Additional 3-way switching module	mbar	External DN40 kvs25				External DN50 kvs40		
Pressure loss	mbar	31	16	8	23	16	11	6
External PHE for DHW		PHE 5007 A=1 1/4" B=1"				PHE 9507 A=2" B=2"		
Primary pressure loss, side A (HP)	mbar	62	32	16	65	45	33	16
Secondary pressure loss, side B (DHW)	mbar	80	41	20	90	63	46	23

## LIMITS OF USE

Unit type	AIR 29				AIR 41			
	5K	7K	10K	5K	6K	7K	10K	
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)								
tf-max HP heating	°C	65	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60	60
tf-max DHW A2/W65	°C	60	59	57	60	59,5	59	57
tf-max HP cooling	°C	7	10	13	7	8	10	13
tf-min WNA cooling	°C	9	12	15	9	10	12	15
Limits of use: minimum outdoor temperature te-min as a function of max. flow temperature tf-max								
	tf-max	te-min			te-min			
LT heating	35°C	-23°C			-23°C			
	45°C	-23°C			-23°C			
	50°C	-23°C			-23°C			
MT heating	55°C	-20°C			-20°C			
HT heating or DHW	60°C	-15°C			-15°C			

HP = heat pump  
PHE = plate heat exchanger  
DHW = domestic hot water

WNA = heat sink system  
LT = low temperature  
MT = medium temperature

HT = high temperature  
male = male thread  
kvs = kvs value

**M6**

Unit type	AIR 80 C13A / AIR 80 C22A			
Connection dimension	inch	DN 50 2" male		
WNA circulation pump		Stratos Para 65/1-12		
		external		
Pump delivery head	mbar	930	1000	1000
Spread at A2/W35	K	5	7	10
Flow rate	m <sup>3</sup> /h	13	9,29	6,50
		100%	70%	50%
Pressure loss – internal	mbar	312	159	78
Residual head I for cascade	mbar	618	841	922
Additional 3-way switching module	mbar	External DN50 kvs40		
Pressure loss	mbar	106	54	26
External PHE for DHW		PHE 9610 A=2" B=2"		
Primary pressure loss, side A (HP)	mbar	139	47	37
Secondary pressure loss, side B (DHW)	mbar	150	80	40

## LIMITS OF USE

Unit type	AIR 80 C13A / AIR 80 C22A			
		5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)				
tf-max HP heating	°C	65	65	65
tf-max WNA heating	°C	60	60	60
tf-max DHW A2/W65	°C	60	59	57
tf-max HP cooling	°C	7	10	13
tf-min WNA cooling	°C	9	12	15
Limits of use: minimum outdoor temperature te-min as a function of max. flow temperature tf-max				
	tf-max	te-min		
LT heating	35°C	-23°C		
	45°C	-23°C		
	50°C	-23°C		
MT heating	55°C	-20°C		
HT heating or DHW	60°C	-12°C		



# GENERAL INFORMATION ABOUT INVERTER AIR/WATER HEAT PUMPS

- Due to the compressor's output control, an inverter air/water heat pump can be operated without buffer tank.
- When using individual room controllers, a heat sink system (WNA) with a volume of less than 100 litres, if the unit is used for heating/cooling or is incorporated into a smart grid, a buffer tank of 30 to 50 litres/kW is required, depending on operating mode.
- All pipework cross-sections of the heat sink system are to be sized and installed according to the nominal flow rates.
- Observe the limits of use of the heat pump.
- For systems with cooling function, ensure that suitable pipework insulation is installed to prevent the formation of condensate.
- For operational reliability, especially in defrosting and/or cooling mode, it is important that the hydraulic safety and pressure maintaining devices are sufficiently sized.
- Ensure an annual inspection of the system according to national and regional regulations.
- As a rule of thumb: system charge pressure for heating and cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]

## 230 V MAINS CONNECTION FOR SINGLE-PHASE INVERTER HEAT PUMPS

The single-phase AIR EAGLE, AIR HAWK and AIR FALCON heat pump series are equipped with a single-phase inverter with a rating > 1.3 kVA. Depending on regional requirements, approval from the grid operator may be required for connection of this heat pump. In Austria, the operation of these units is only permitted with the written approval of the grid operator according to the technical regulations for connecting to the public power supply grid with operational voltages up to 1000 V (TAEV), part III and/or the technical and organisational regulations for power grid operators and users (TOR), part D1. Compliance with the limits is handled from utility to utility with varying degrees of stringency. Approval by the grid operator is dependent on the system location and the capacity of the grid operator in that area, and will in the majority of cases be dealt with positively. Before ordering a single-phase inverter heat pump, we recommend that you obtain approval from the grid operator for the planned installation site via a licensed electrical engineer (see supplementary datasheet from OCHSNER).

## SOUND EMISSIONS

The emission level is expressed in terms of the sound pressure level as measured from a certain distance. This depends on local conditions. In accordance with VDI 2058, the following values may not be exceeded at the open window of a neighbouring property (day/night sound pressure level):

- Commercial/residential areas 60 dB(A) / 45 dB(A)
- General residential areas 55 dB(A) / 40 dB(A)
- Exclusively residential areas 50 dB(A) / 35 dB(A)

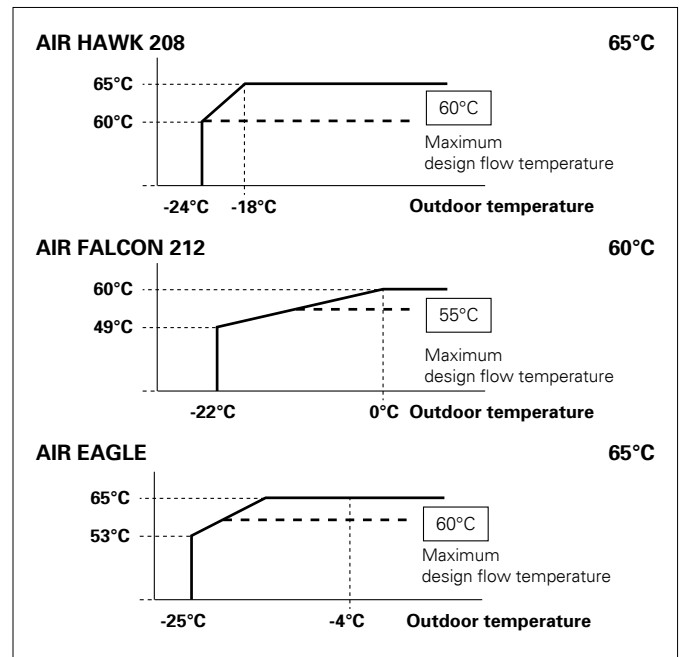
OCHSNER outdoor units lie clearly below these values. The sound pressure level measured at 1 m distance in a free field is approx. 8 dB below the sound power level. Here, the sound pressure level decreases by approx. 2 dB(A) per metre. Observe the information in the TA-Lärm (technical instructions on sound abatement) and the BWP code of practice on sound emissions.

### Make sure you lay the refrigerant lines in such a way as to minimise noise emissions:

- Ensure that the refrigerant lines are installed in a way that ensures insulation from structure-borne noise.
- Avoid routing the lines in the vicinity of bedrooms. The refrigerant in the lines can generate noise under certain operational conditions.

If the appliance, the refrigerant lines, the pipe fixings and the wall conduits are not installed correctly, structure-borne sounds can be transmitted to the building. This is the responsibility of the system installer.

## LIMITS OF USE



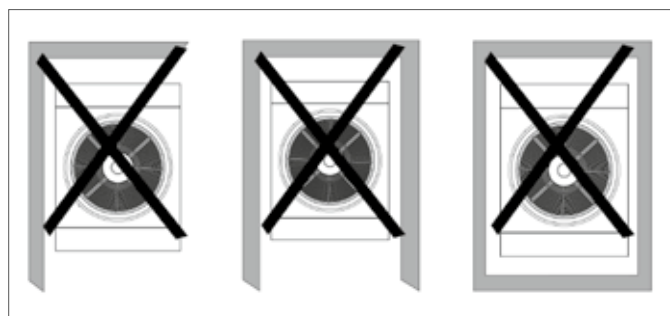


# ENGINEERING AND INSTALLATION INFORMATION: AIR EAGLE

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

## OUTDOOR UNIT INSTALLATION LOCATION

The outdoor unit is intended to be installed only out of doors.



Please note the following with regard to sound emissions from the outdoor unit:

- Avoid installing on reverberant flooring.
- Avoid installing between building walls. Walls can increase the noise level.
- Avoid installing next to bedrooms.
- We recommend installation in a free field (not near walls) to minimise sound emissions. Installing parallel to a wall increases noise reflections. One possible remedy is an installation at an angle of 90° to the wall.

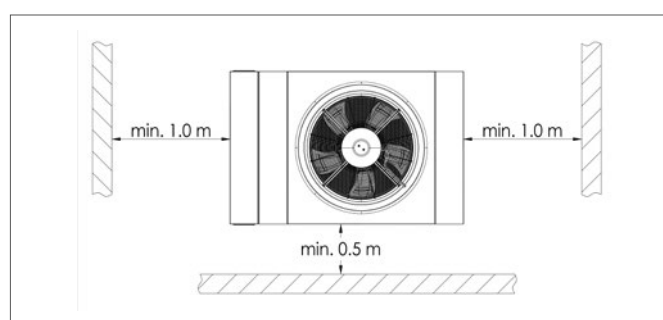
Plants and cultivated areas around the outdoor unit, subject to minimum clearances, can reduce the noise level of the outdoor unit.

## LINE LENGTHS AND HEIGHT DIFFERENTIALS

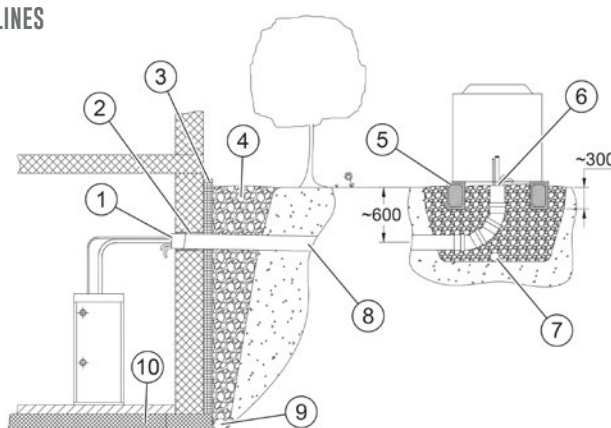
**Max. connection length and height differential:**

<b>EAGLE</b>	$L \leq 25 \text{ m}$	$H \leq \pm 15 \text{ m}$
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## MINIMUM CLEARANCES



## UNDERGROUND REFRIGERANT LINES



- 1) Appropriately sealed wall conduit
- 2) Appropriate sealing of the refrigerant lines as they pass through the pipe liner
- 3) Insulation
- 4) Gravel
- 5) Reinforced strip foundation
- 6) Appropriate sealing at the end of the pipe liner (between refrigerant lines and pipe liner)
- 7) Drainage pipe (frostproof)
- 8) Pipe liner (with min. 2% fall to outside)
- 9) Drainage
- 10) Foundation

# ENGINEERING AND INSTALLATION INFORMATION: AIR FALCON

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

## OUTDOOR UNIT INSTALLATION LOCATION

The outdoor unit is intended to be installed only out of doors.

Please note the following with regard to sound emissions from the outdoor unit:

- Avoid installing on reverberant flooring.
- Avoid installing between building walls. Walls can increase the noise level.
- Avoid installing next to bedrooms.
- We recommend installation in a free field (not near walls) to minimise sound emissions. Installing parallel to a wall increases noise reflections. One possible remedy is an installation at an angle of 90° to the wall.

Plants and cultivated areas around the outdoor unit, subject to minimum clearances, can reduce the noise level of the outdoor unit.

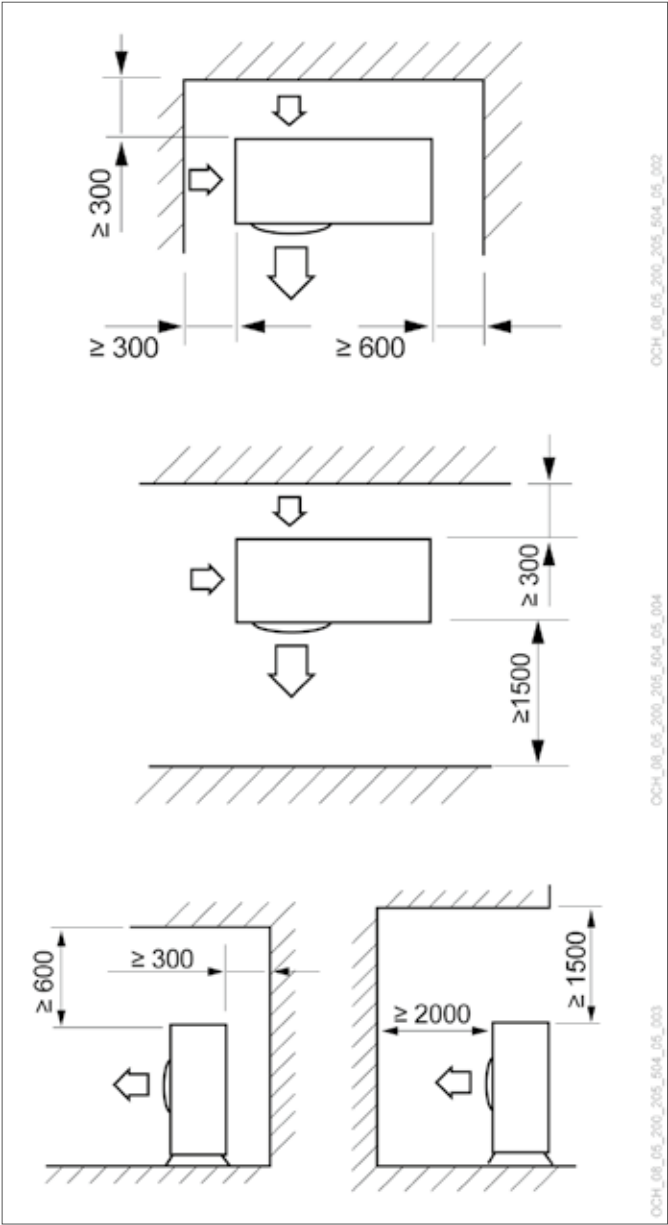
Please note that, with wall mounting using wall brackets, increased noise levels can be expected and noise may be transmitted to the walls. For these reasons, we recommend installation using an anti-vibration base with floor bracket.

## LINE LENGTHS AND HEIGHT DIFFERENTIALS

Max. connection length and height differential:		
AIR FALCON 212	L ≤ 20 m	H ≤ +/- 15 m

## MINIMUM CLEARANCES

- The outdoor unit may be installed adjacent to walls/objects on one, two or three of its sides provided that the air outlet side remains clear and the machine-specific minimum clearances are observed.
- It is permissible to install the outdoor unit under a roof if the unit is permanently surrounded by open space on three sides and the machine-specific minimum clearances are observed.
- It is permissible to install the outdoor unit with both its air outlet side and air inlet side facing walls/objects, provided that the other two sides around the outdoor unit are kept clear at all times and the machine-specific minimum clearances are observed.



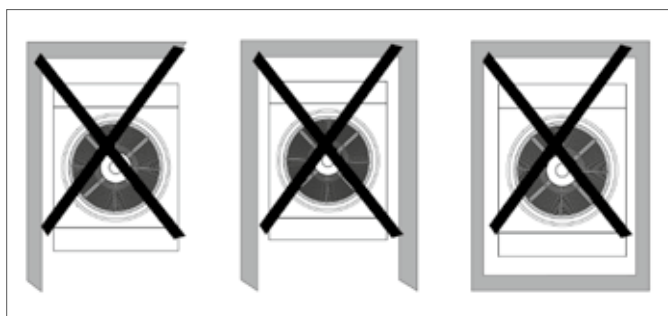


# ENGINEERING AND INSTALLATION INFORMATION: AIR HAWK

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

## OUTDOOR UNIT INSTALLATION LOCATION

The outdoor unit is intended to be installed only out of doors.



Please note the following with regard to sound emissions from the outdoor unit:

- Avoid installing on reverberant flooring.
- Avoid installing between building walls. Walls can increase the noise level.
- Avoid installing next to bedrooms.

Plants and cultivated areas around the outdoor unit, subject to minimum clearances, can reduce the noise level of the outdoor unit.

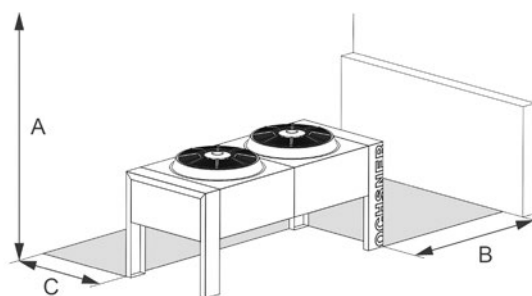
## CONNECTION LINES BETWEEN INDOOR AND OUTDOOR UNITS

- Lay the refrigerant lines and the fan power supply in a pipe liner.
- Observe the regulations regarding thermal insulation and laying in pipe liners (condensate drainage, etc.).
- The pipe liner (smooth inner walls) must have an adequate inner diameter (depending on the connection line) and must be laid with a large bending radius (more than 1 m). 90° bends are not permitted. The recommended minimum pipe liner diameters can be found in the technical guides from OCHSNER.
- Connection to the outdoor unit must be carried out by OCHSNER customer service or authorised OCHSNER customer service partners.
- Ensure that the refrigerant lines are installed in a way that ensures insulation from structure-borne noise.
- Select the installation sites for the indoor and outdoor units so that the maximum permissible line lengths and height differentials are observed.
- Avoid routing the lines in the vicinity of bedrooms. The refrigerant in the lines can generate noise under certain operational conditions.

## MINIMUM CLEARANCES

- It is permissible to install the outdoor unit under a roof if the space around the unit is permanently open on three sides.
- The minimum clearance between two outdoor units (e.g. connected in cascade) is 1000 mm on all sides

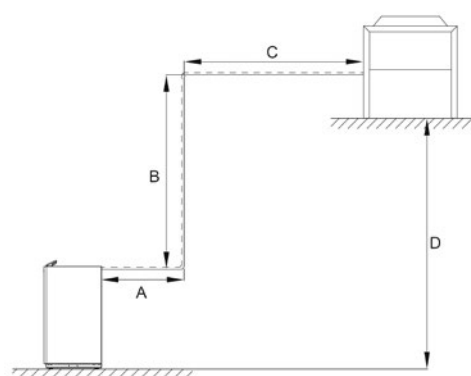
<b>A</b>	≥ 3000 mm (minimum clearance to roof)
<b>B</b>	≥ 1000 mm (minimum clearance to a wall)
<b>C</b>	≥ 500 mm (minimum clearance to a wall from the long side)



## LINE LENGTHS AND HEIGHT DIFFERENTIALS

- Observe the maximum permissible line lengths for the refrigerant lines.
- Observe the maximum permissible height differential between the indoor and outdoor units.

	<b>A + B + C</b> Sum of line lengths	<b>D</b> (max. height differential)
<b>AIR HAWK 208</b>	≤ 20 m	≤ 10 m



# ENGINEERING AND INSTALLATION INFORMATION: AIR MULTI M4

For detailed engineering and installation information for air/water heat pumps, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- Size all pipework cross sections according to the nominal flow rates.
- Observe the limits of use in terms of the heat source and heat sink systems.
- For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
- Ensure an annual inspection of the system according to national and regional regulations.
- See the associated hydraulic schematics 102-003 and 01-002.
- As a rule of thumb for the heat sink side:
  - System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]
  - System charge pressure for cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]
- As a rule of thumb for the heat source side:
  - Heat source system charge pressure [bar] = DEV pre-charge pressure + 0.5 [bar]

## HEAT SINK SYSTEM: FLOW RATES AND PIPE DIMENSIONS

### CASCADE DUO

Unit type		AIR MULTI DUO 82	
Order no.		290840	
	Unit type	Flow rate	Pipe diameter
		m <sup>3</sup> /h	mm
Master (M1)	AIR 41	6	DN 50
Slave (S1)	AIR 41	6	DN 50
Overall pipe (G1)		12	DN 65
Buffer tank (P1)	PU1000		DN 65

### CASCADE TRIO

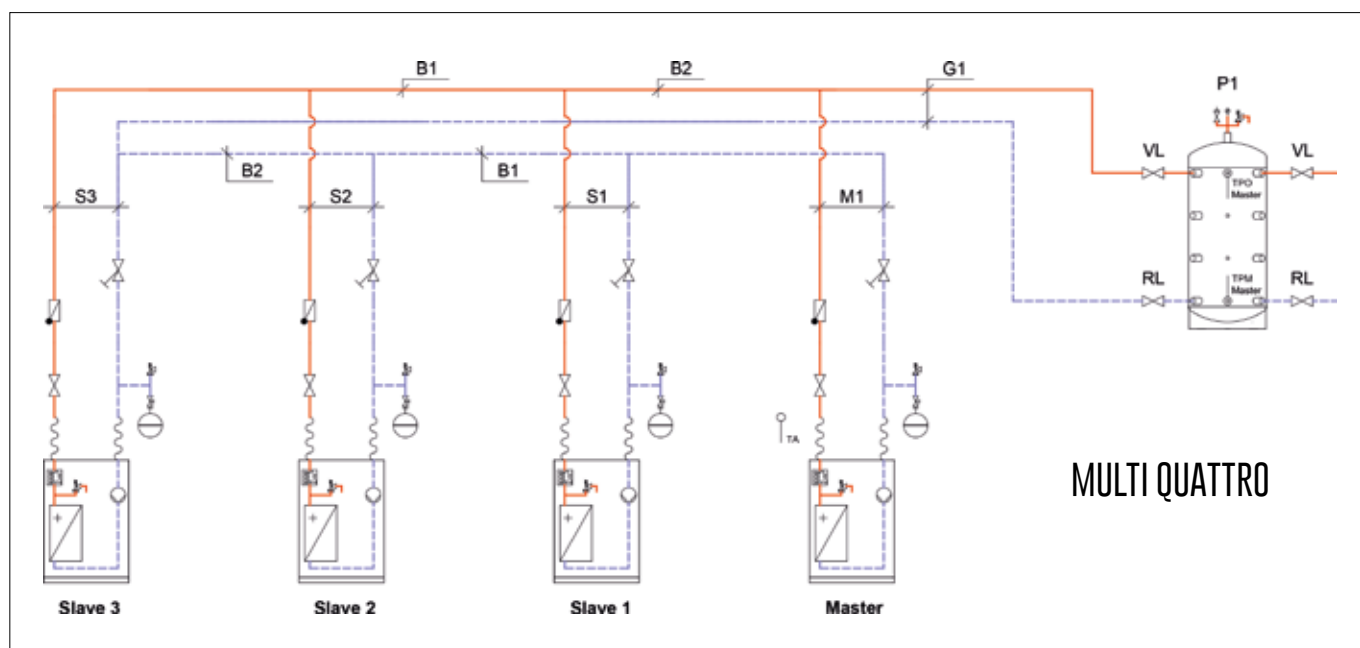
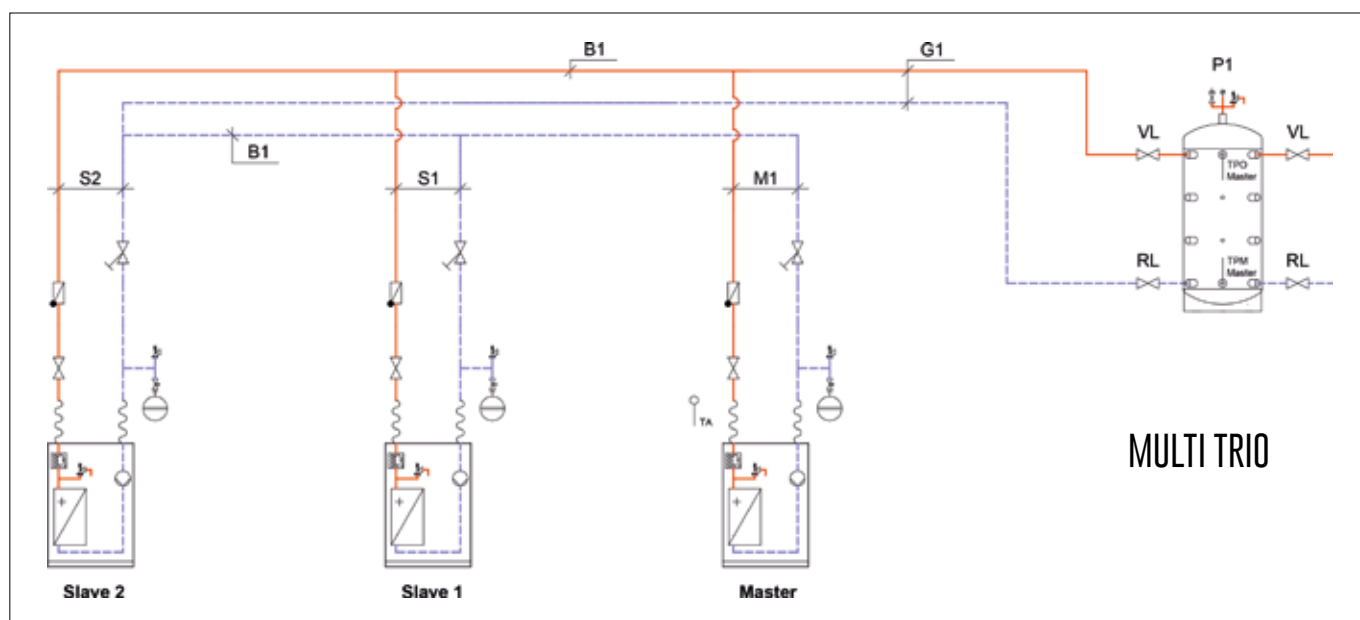
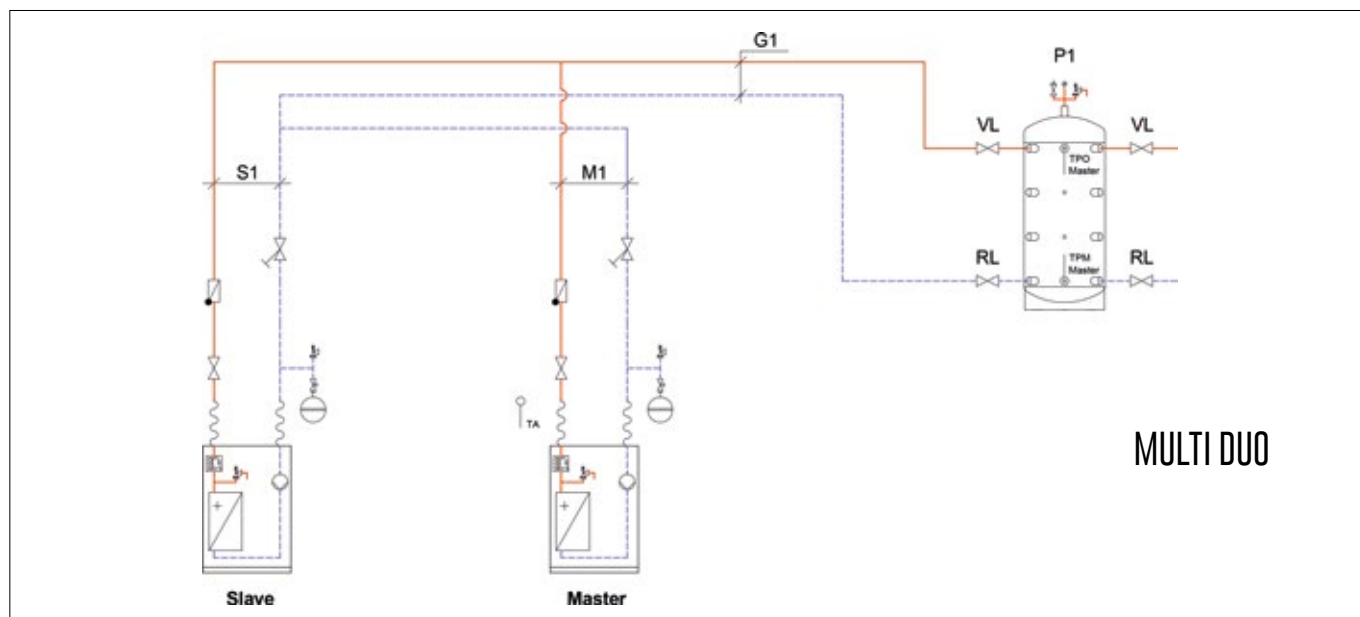
Unit type		AIR MULTI TRIO 123	
Order no.		290841	
	Unit type	Flow rate	Pipe diameter
		m <sup>3</sup> /h	mm
Master (M1)	AIR 41	6	DN 50
Slave (S1)	AIR 41	6	DN 50
Slave (S2)	AIR 41	6	DN 50
Main pipe (B1)		12	DN 65
Overall pipe (G1)		18	DN 80
Buffer tank (P1)	PU1500		DN 80

### CASCADE QUATTRO

Unit type		AIR MULTI QUATTRO 164	
Order no.		290842	
	Unit type	Flow rate	Pipe diameter
		m <sup>3</sup> /h	mm
Master (M1)	AIR 41	6	DN 50
Slave (S1)	AIR 41	6	DN 50
Slave (S2)	AIR 41	6	DN 50
Slave (S3)	AIR 41	6	DN 50
Main pipe (B1)		12	DN 65
Main pipe (B2)		18	DN 80
Overall pipe (G1)		24	DN 100
Buffer tank (P1)	PU1500		DN 80

**Note:** The given flow rates and pipe diameters are guide values. A system-specific layout is required.

**P1:** Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



# ENGINEERING AND INSTALLATION INFORMATION: TERRA M2/M4/M6

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- Size all pipework cross sections according to the nominal flow rates.
- Observe the limits of use in terms of the heat source and heat sink systems.
- For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
- Ensure an annual inspection of the system according to national and regional regulations.
- As a rule of thumb for the heat sink side:
  - System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]
  - System charge pressure for cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]
- As a rule of thumb for the heat source side:
  - Heat source system charge pressure [bar] = DEV pre-charge pressure + 0.5 [bar]

## HEAT SOURCE SYSTEM

Sizing and laying the heat source system is the system installer's responsibility and must be carried out in compliance with OCHSNER guidelines.

- We recommend designing the heat source systems in the form of shallow laying, deep trench laying or geothermal probes.
- Energy cages or energy piles are to be designed and installed according to regional and national standards (e.g. VDI 4640 and/or ÖWAV Rule Sheet 207).
- Geothermal systems laid to an installation depth of 10 m are to be classed as surface geothermal energy and therefore require in principle the same extraction area as free ground areas such as shallow or deep trench (Künette) laying.
- In practice therefore, no surface area savings are to be made with energy cages for sustainable heat source systems over many years.
- Observe the applicable national and regional regulations and provisions.
- The same rating for cooling (heat sink) as well as for heating (extraction capacity) is valid for seasonal cooling mode (4-8 weeks).
- A circuit balancing valve for hydronic balancing is to be installed and adjusted in the system in order to provide economic and safe operation.

### Recommended max. pressure losses

Connection line, incl. individual losses	Max. 100 mbar
Brine circuits or probes, incl. brine distributor	Max. 300 mbar

The extraction capacities given below are guide values.

### GUIDE VALUE FOR EXTRACTION CAPACITY WITH SHALLOW LAYING<sup>1)</sup>

Soil conditions	Max. spec. extraction capacity at 1800 h/a [W/m <sup>2</sup> ]	Max. spec. extraction capacity at 2400 h/a [W/m <sup>2</sup> ]
Dry, non-cohesive soil	10	8
Cohesive soil, moist	25	20
Water-saturated soil, sand/gravel	40	32

### GUIDE VALUE FOR EXTRACTION CAPACITY WITH DEEP TRENCH LAYING<sup>1)</sup>

Soil conditions	Max. spec. extraction capacity at 1800 h/a [W/m] deep trench
Cohesive soil, moist	100
Water-saturated soil, sand/gravel	125

### GUIDE VALUE FOR EXTRACTION CAPACITY WITH DEEP DRILLING<sup>1)</sup>

Soil conditions	Max. spec. extraction capacity at 1800 h/a [W/m]	Max. spec. extraction capacity at 2400 h/a [W/m]
Dry sediment	25	20
Shale, slate	45	35
Firm rock with high thermal conductivity	84	70
Substratum with high groundwater flow	65-80	55-65

### HEAT TRANSFER MEDIUM (BRINE CIRCUIT):

- When selecting the heat transfer medium in the brine circuit, observe national and regional regulations and codes (also with regard to investment subsidies).
- We recommend the use of ethylene glycol for brine/water heat pumps due to its optimum technical properties. Ethylene glycol is characterised by its low viscosity and improved heat transfer compared with propylene glycol, thus leading to lower electricity consumption of the circulation pump.
- O-Cool pro® on the basis of propylene glycol is mixed with environmentally friendly corrosion inhibitors and complies with foodstuff compatibility standard LD 0.

### SIZING:

- For slightly turbulent flow conditions with ethylene glycol, the flow rate per collector should be 0.6-0.8 m<sup>3</sup>/h.
- Where geothermal probes are used, we recommend the use of duplex probes.
- Depending on conditions, simplex probes can also be used; these are to be calculated individually when designing the system.

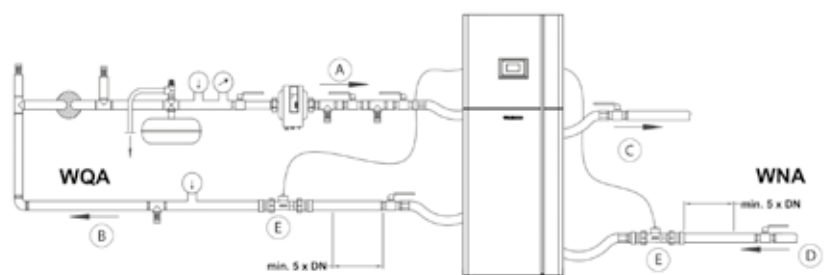
<sup>1)</sup> Observe the regional and national regulations (e.g. AT/DE: VDI 4640 and ÖWAV Rule Sheet 207)



## HYDRAULIC CONNECTION FOR TERRA M6

- A) Heat source inlet
- B) Heat source outlet
- C) Heat sink, flow
- D) Heat sink, return
- E) Flow meter

WQA) Heat source system  
WNA) Heat sink system



## PASSIVE COOLING

Passive cooling in case of brine/water heat pumps is permissible only in combination with geothermal probes. Due to their shallow laying, horizontal brine collector systems are not suitable for passive cooling.

Geothermal probes can only be used for passive cooling within the individual limits of use for the boreholes. The system installer is responsible for geothermal probes and their suitability for heating and passive cooling (sufficient extraction capacity). We recommend obtaining a hydro geological assessment and measuring the borehole thermal capacity.

### THE PASSIVE COOLING SETS CONSIST OF

- Plate heat exchanger
- 3-way switching modules (3 pieces)
- Threaded fitting
- Diffusion-proof insulation
- Remote controller FB 6104 RH with graphic display and humidity sensor
- Contact thermostat

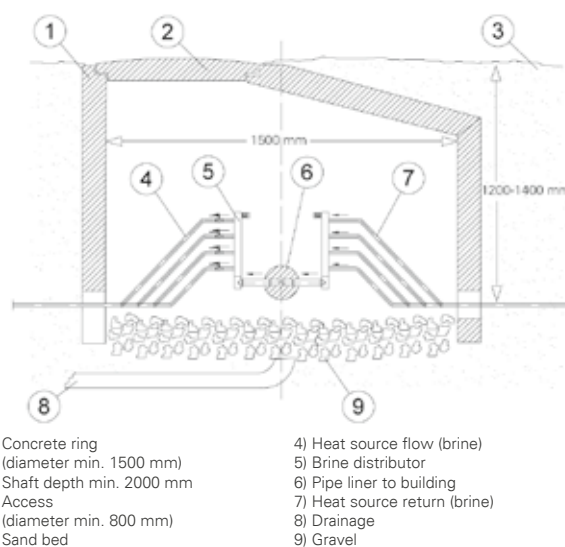
### THE BRINE COLLECTOR SETS CONSIST OF

- ESK:
  - PE piping: 1", 120 m (per bundle)
  - Brine distributor without TacoSetter
  - Frost protection: ethylene glycol
- ESKP:
  - PE piping: 1", 120 m (per bundle)
  - Brine distributor without TacoSetter
  - Frost protection: ethylene glycol
  - Circulation pump
  - Diaphragm expansion vessel
  - Pressure gauge, safety valve, thermometer
  - Drain and fill valve

## SCREED DRYING

The drying of flooring screed by means of the heat pump is not permitted for ground-connected systems. In such cases, screed can be dried using the electric immersion heater in the heat pump buffer tank or mobile drying units. Installation and adjustment of the controller are the responsibility of the system installer, taking into account the requirements of the relevant standards and in consultation with the flooring contractor. Possible OTE controller settings can be found in the OTE system partner operating manual.

### COLLECTION SHAFT



- 1) Concrete ring  
(diameter min. 1500 mm)  
Shaft depth min. 2000 mm
- 2) Access  
(diameter min. 800 mm)
- 3) Sand bed
- 4) Heat source flow (brine)
- 5) Brine distributor
- 6) Pipe liner to building
- 7) Heat source return (brine)
- 8) Drainage
- 9) Gravel

# SIZING THE HEAT SOURCE SYSTEM: TERRA M2/M4

## FOR GROUND SOURCE HEAT PUMPS (BRINE)



M2

Unit type		TERRA 6	TERRA 8	TERRA 11	TERRA 14
Connection dimension	inch	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male
WQA circulation pump		Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8
		Internal	Internal	Internal	Internal
Operating point		B0/W35	B0/W35	B0/W35	B0/W35
Spread	K	3	3	3	3
Flow rate	m³/h	1,45	1,87	2,59	3,28
PHE pressure loss – internal	mbar	-	-	-	-
Flow meter		Internal	Internal	Internal	Internal
Flow meter pressure loss	mbar	-	-	-	-
Residual head I	mbar	589	579	505	421

### EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		ESK 3	ESK 4	ESK 6	ESK 7
Brine distributor		DN40x1 1/2" fem. for 3 circuits kvs12	DN40x1 1/2" fem. for 4 circuits kvs12	DN40x1 1/2" fem. for 6 circuits kvs12	DN50x2" fem. for 7 circuits kvs30
Brine distributor pressure loss	mbar	15	24	47	12
Brine collector		at 120 lm PE-DN25 32x2.0	at 120 lm PE-DN25 32x2.0	at 120 lm PE-DN25 32x2.0	at 120 lm PE-DN25 32x2.0
Geothermal collector pressure loss	mbar	40	37	32	37
Number of collector circuits		3	4	6	7
Recommended installation areas	m²	180	230	380	470
Residual head II (HP + collector set)	mbar	534	518	426	372
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions					
System content, WQA	Litre	255	331	499	573
Connection line 2x20 lm		DN32-PE40x3.7	DN32-PE40x3.7	DN40-PE50x4.6	DN40-PE50x4.6
Ethylene glycol 25% canister 25 l	pce	3	4	5	6
Propylene glycol 32% canister 25 l	pce	4	5	7	8

### EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		1x100 m	2x80 m	2x100 m	3x100 m
Pressure loss in probe	mbar	199	66	159	113
Brine distributor		DN 40 x1 1/2" fem. for 2 circuits kvs12	DN 40 x1 1/2" fem. for 4 circuits kvs12	DN 40 x1 1 1/2" fem. for 4 circuits kvs12	DN 40 x1 1/2" fem. for 6 circuits kvs30
Pressure loss in distributor	mbar	15	24	47	12
Residual head II (HP + probe)	mbar	375	489	299	296
Connection line 2x20 lm		DN32-PE40x3.7	DN32-PE40x3.7	DN40-PE50x4.6	DN40-PE50x4.6
System content, WQA	Litre	249	379	484	699
Ethylene glycol 25% canister 25 l	pce	3	4	5	7
Propylene glycol 32% canister 25 l	pce	4	5	7	9

#### Note:

- The examples for geothermal probes have been calculated with DN25 PE 32 x 2.9 mm duplex probes and an extraction capacity of 40 W/m. Sizing of probes with other dimensions, as well as for simplex probes, must be calculated separately. Observe the regional and national regulations.
- Specific heat capacity of water/frost protection mixture: 25% ethylene glycol 3.82 kJ/kg K at 0°C, 32% propylene glycol 3.82 kJ/kg K at 0°C



65"

M4

Unit type		TERRA 18	TERRA 27
Connection dimension	inch	DN 40 1 1/2" male	DN 40 1 1/2" male
WQA circulation pump		Stratos Para 25/1-12	Stratos Para 25/1-12
		Internal	Internal
Operating point		B0/W35	B0/W35
Spread	K	3	4
Flow rate	m <sup>3</sup> /h	4,15	4,75
PHE pressure loss – internal	mbar	-	-
Flow meter		Internal	Internal
Flow meter pressure loss	mbar	-	-
Residual head I	mbar	737	523

## EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		ESK 8	ESK 14
Brine distributor		DN50x2" fem. for 8 circuits kvs30	DN50x2" fem. for 2x7 circuits kvs30
Brine distributor pressure loss	mbar	19	7
Brine collector		at 120 lm PE-DN25 32x2.0	at 120 lm PE-DN25 32x2.0
Geothermal collector pressure loss	mbar	46	14
Number of collector circuits		8	14
Recommended installation areas	m <sup>2</sup>	540	900
Residual head II (HP + collector set)	mbar	672	502
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions			
System content, WQA	Litre	674	1123
Connection line 2x20 lm		DN50-PE63x5.8	DN50-PE63x5.8
Ethylene glycol 25% canister 25 l	pce	7	12
Propylene glycol 32% canister 25 l	pce	9	15

## EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		4x80 m	5x100 m
Pressure loss in probe	mbar	81	50
Brine distributor		DN50x2" fem. for 8 circuits kvs30	DN50x2" fem. for 10 circuits kvs30
Pressure loss in distributor	mbar	19	7
Residual head II (HP + probe)	mbar	637	466
Connection line 2x20 lm		DN50-PE63x5.8	DN50-PE63x5.8
System content, WQA	Litre	773	1161
Ethylene glycol 25% canister 25 l	pce	8	12
Propylene glycol 32% canister 25 l	pce	10	15

PHE = plate heat exchanger  
WQA = heat source system

FM = flow meter  
male = male thread

kvs = kvs value

# SIZING THE HEAT SINK SYSTEM: TERRA M2/M4

## FOR GROUND SOURCE HEAT PUMPS (BRINE)

Hydraulic versions			Electric immersion heater		3-way switching module	
			Internal	external	Internal	external
M2-1	M4-1		x		x	
M2-2	M4-2			x	x	
M2-3	M4-3		x			x
M2-4	M4-4	M6		x		x



M2

Unit type		TERRA 6			TERRA 8			TERRA 11			TERRA 14		
Connection dimension	inch	DN 32 1 1/4"			DN 32 1 1/4"			DN 32 1 1/4"			DN 32 1 1/4"		
WNA circulation pump		Yonos Para HPS 25/7.5			Yonos Para HPS 25/7.5			Yonos Para HPS 25/7.5			Yonos Para HPS 25/7.5		
		Internal			Internal			Internal			Internal		
Pump delivery head	mbar	769	778	787	760	771	780	630	761	772	477	675	765
Spread at B0/W35	K	5	7	10	5	7	10	5	7	10	5	7	10
Flow rate	m³/h	1,0	0,71	0,50	1,29	0,92	0,65	1,77	1,26	0,89	2,27	1,74	1,22
		100%	70%	50%	100%	70%	50%	100%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	113	58	28	264	135	66	279	142	70	414	211	104
Internal pressure loss M4-4	mbar	-	-	-	-	-	-	-	-	-	-	-	-
Residual head I M2-1; M4-1	mbar	656	720	756	496	637	714	351	619	703	63	464	661
Residual head I M4-4 for cascade	mbar	-	-	-	-	-	-	-	-	-	-	-	-
Additional 3-way switching module	mbar	External DN32 kvs16			External DN32 kvs16			External DN32 kvs16			External DN32 kvs16		
Pressure loss	mbar	4	2	1	7	3	2	12	6	3	20	12	6
External PHE for DHW		PHE 2007 A=1" B=1"			PHE 2007 A=1" B=1"			PHE 2007 A=1" B=1"			PHE 5007 A=1 1/4" B=1"		
Primary pressure loss, side A (HP)	mbar	37	19	9	63	32	16	77	39	19	37	22	11
Secondary pressure loss, side B (DHW)	mbar	71	36	18	72	37	18	26	13	7	48	28	14

## LIMITS OF USE

Unit type		TERRA 6			TERRA 8			TERRA 11			TERRA 14		
		5K	7K	10K	5K	7K	10K	5K	7K	10K	5K	7K	10K
Limits of use flow temperatures tf-max/tf-min HP/WNA													
tf-max HP heating	°C	65	65	65	65	65	65	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60	60	60	60	60	60	60
tf-max HP cooling	°C	7	10	13	7	10	13	7	10	13	7	10	13
tf-min WNA cooling	°C	9	9	15	9	12	15	9	12	15	9	12	15

HP = heat pump  
PHE = plate heat exchanger  
DHW = domestic hot water

WNA = heat sink system  
LT = low temperature  
MT = medium temperature

HT = high temperature  
male = male thread  
kvs = kvs value



M4

Unit type	TERRA 18				TERRA 27		
Connection dimension	inch	DN 40 1 1/2"				DN 40 1 1/2"	
WNA circulation pump	Stratos Para 25/1-8				Stratos Para 25/1-8		
		Internal			Internal		
Pump delivery head	mbar	730	727	725	575	713	727
Spread at B0/W35	K	5	7	10	5	7	10
Flow rate	m³/h	2,92	2,09	1,46	4,42	3,16	2,21
		100%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	358	182	89	549	280	137
Internal pressure loss M4-4	mbar	287	146	72	388	198	97
Residual head I M2-1; M4-1	mbar	372	545	635	26	433	590
Residual head I M4-4 for cascade	mbar	443	580	653	187	515	630
Additional 3-way switching module	mbar	External DN40 kvs25			External DN40 kvs25		
Pressure loss	mbar	14	7	3	31	16	8
External PHE for DHW		PHE 5007 A=1 1/4" B=1"			PHE 5007 A=1 1/4" B=1"		
Primary pressure loss, side A (HP)	mbar	47	24	12	65	33	16
Secondary pressure loss, side B (DHW)	mbar	80	41	20	90	46	23

## LIMITS OF USE

Unit type		TERRA 18			TERRA 27		
		5K	7K	10K	5K	7K	10K
Limits of use flow temperatures tf-max/tf-min HP/WNA							
tf-max HP heating	°C	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60
tf-max HP cooling	°C	7	10	13	7	10	13
tf-min WNA cooling	°C	9	12	15	9	12	15

# SIZING THE HEAT SOURCE SYSTEM: TERRA M6

## FOR GROUND SOURCE HEAT PUMPS (BRINE)



M6

Unit type		TERRA 40	TERRA 76
Connection dimension	inch	DN 50 2" male	DN 50 2" male
WQA circulation pump		Stratos Para 40/1-12	Stratos Para 65/1-12
		external	external
Operating point		B0/W35	B0/W35
Spread	K	3	3
Flow rate	m³/h	9,99	18,82
PHE pressure loss – internal	mbar	90	150
Flow meter		FM-DN50 x 2" Fem. kvs40	FM-DN50 x 2" Fem. kvs40
Flow meter pressure loss	mbar	62	221
Residual head I	mbar	757	544

### EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		ESKP 18	-
Brine distributor		DN50x2" fem. for 2x9 circuits kvs30	DN50x2" fem. for 4x8 circuits kvs30
Brine distributor pressure loss	mbar	28	46
Brine collector		at 120 lm PE-DN25 32x2.0	at 120 lm PE-DN25 32x2.0
Geothermal collector pressure loss	mbar	52	58
Number of collector circuits		18	32
Recommended installation areas	m²	1200	2400
Residual head II (HP + collector set)	mbar	704	440
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions			
System content, WQA	Litre	1449	2500
Connection line 2x20 lm		DN60-PE75x6.8	DN70-PE99x8.2
Ethylene glycol 25% canister 25 l	pce	15	26
Propylene glycol 32% canister 25 l	pce	19	33

### EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		7x100 m	12x100 m
Pressure loss in probe	mbar	193	232
Brine distributor		DN50x2" fem. for 2x7 circuits kvs30	DN50x2" fem. for 3x8 circuits kvs30
Pressure loss in distributor	mbar	28	44
Residual head II (HP + probe)	mbar	536	267
Connection line 2x20 lm		DN60-PE75x6.8	DN70-PE99x8.2
System content, WQA	Litre	1628	2802
Ethylene glycol 25% canister 25 l	pce	17	29
Propylene glycol 32% canister 25 l	pce	21	36

#### Note:

- The examples for geothermal probes have been calculated with DN 25 PE 32 x 2.9 mm duplex probes and an extraction capacity of 40 W/m. Sizing of probes with other dimensions, as well as for simplex probes, must be calculated separately. Observe the regional and national regulations.
- Specific heat capacity of water/frost protection mixture: 25% ethylene glycol 3.82 kJ/kg K at 0°C, 32% propylene glycol 3.82 kJ/kg K at 0°C

# SIZING THE HEAT SINK SYSTEM: TERRA M6

FOR GROUND SOURCE HEAT PUMPS (BRINE)



M6

Unit type		TERRA 40		TERRA 76	
Connection dimension	inch	DN 50 -2" male		DN 50 - 2" male	
WNA circulation pump		Stratos 40/1-8		Stratos 65/1-12	
		external		external	
Pump delivery head	mbar	720	720	909	954
<b>Operating mode</b>		<b>H/C</b>	<b>DHW</b>	<b>H/C</b>	<b>DHW</b>
Operating point		B0/W35	B15/W50	B0/W35	B15/W50
Spread	K	5	7	5	7
Flow rate	m³/h	6,9	4	13,3	7,5
Pressure loss – internal	mbar	40	25	50	20
<b>Flow meter</b>		<b>FM 50 x 2" fem. kvs 40</b>		<b>FM 50 x 2" fem. kvs 40</b>	
Pressure loss	mbar	30	10	110	35
Residual head I	mbar	650	685	748	899
<b>3-way switching module</b>		<b>External DN50 kvs40</b>		<b>External DN50 kvs40</b>	
Pressure loss	mbar	30	10	110	35
<b>External PHE for DHW</b>		<b>6007</b>		<b>9609</b>	
Dimension / pressure loss – heating	mbar	1 1/4"	33	2"	59
Dimension / pressure loss – DHW	mbar	1"	49,4	2"	51,6

Residual head for heating with one 3-way switching module for DHW heating / residual head for heating circuit with two 3-way switching modules for DHW heating

PHE = plate heat exchanger  
WQA = heat source system  
DHW = domestic hot water

WNA = heat sink system  
CH = central heating  
H/C= heating/cooling

FM = flow meter  
male = male thread  
kvs = kvs value



# ENGINEERING AND INSTALLATION INFORMATION: TERRA MULTI M6

For detailed engineering and installation information for brine/water heat pumps, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- Size all pipework cross sections according to the nominal flow rates.
- Observe the limits of use in terms of the heat source and heat sink systems.
- For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
- Ensure an annual inspection of the system according to national and regional regulations.
- For further information, see the associated hydraulic schematic 01-008.
- As a rule of thumb for the heat sink side:
  - System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]
  - System charge pressure for cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]
- As a rule of thumb for the heat source side:
  - Heat source system charge pressure [bar] = DEV pre-charge pressure + 0.5 [bar]

## HEAT SINK SYSTEM: FLOW RATES AND PIPE DIMENSIONS

### CASCADE DUO

Unit type		TERRA MULTI DUO 152 HPLA	
Order no.		290846	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 76	13,3	DN 65
Overall pipe (G1)		26,6	DN 100 (DN 80)
Buffer tank (P1)	PU 3000		DN 100 (DN 80)

### CASCADE TRIO

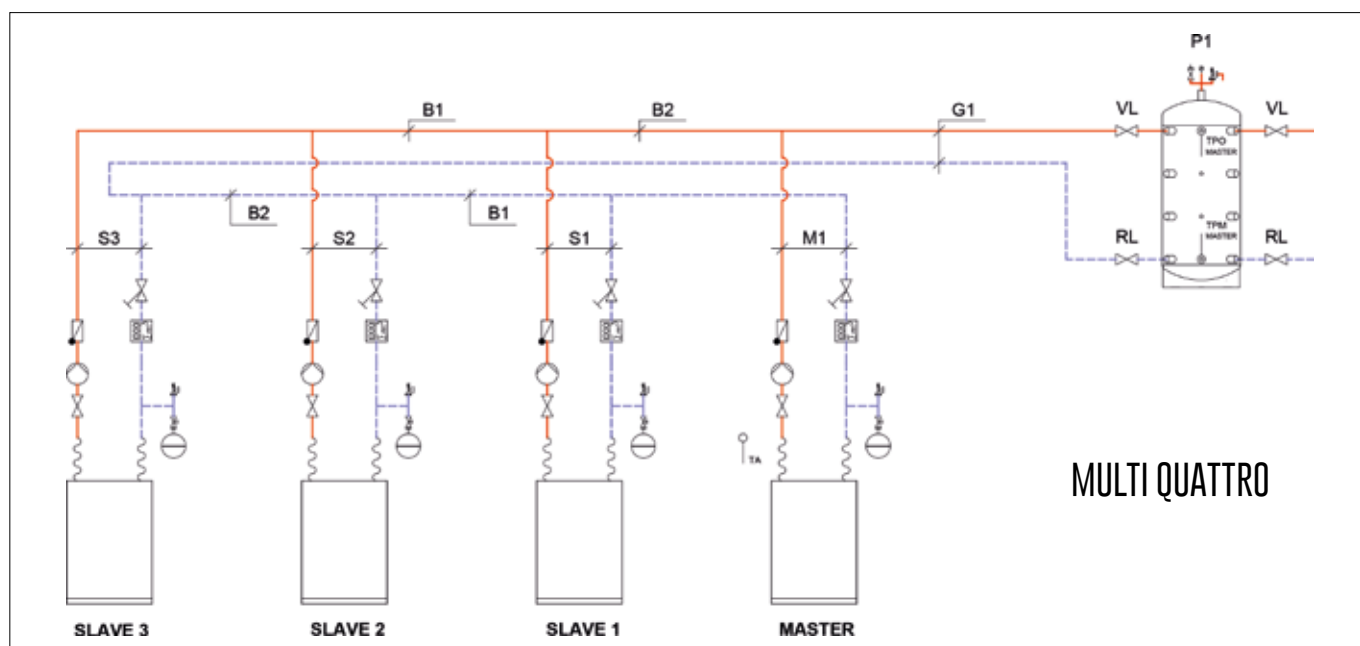
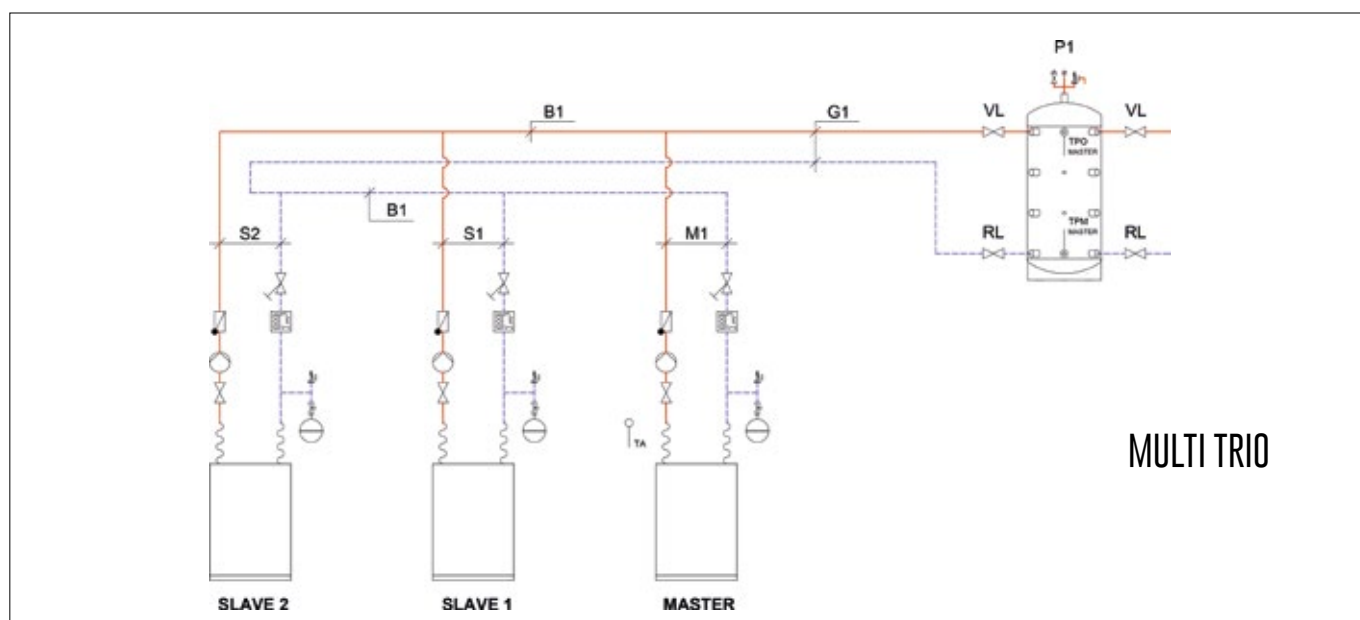
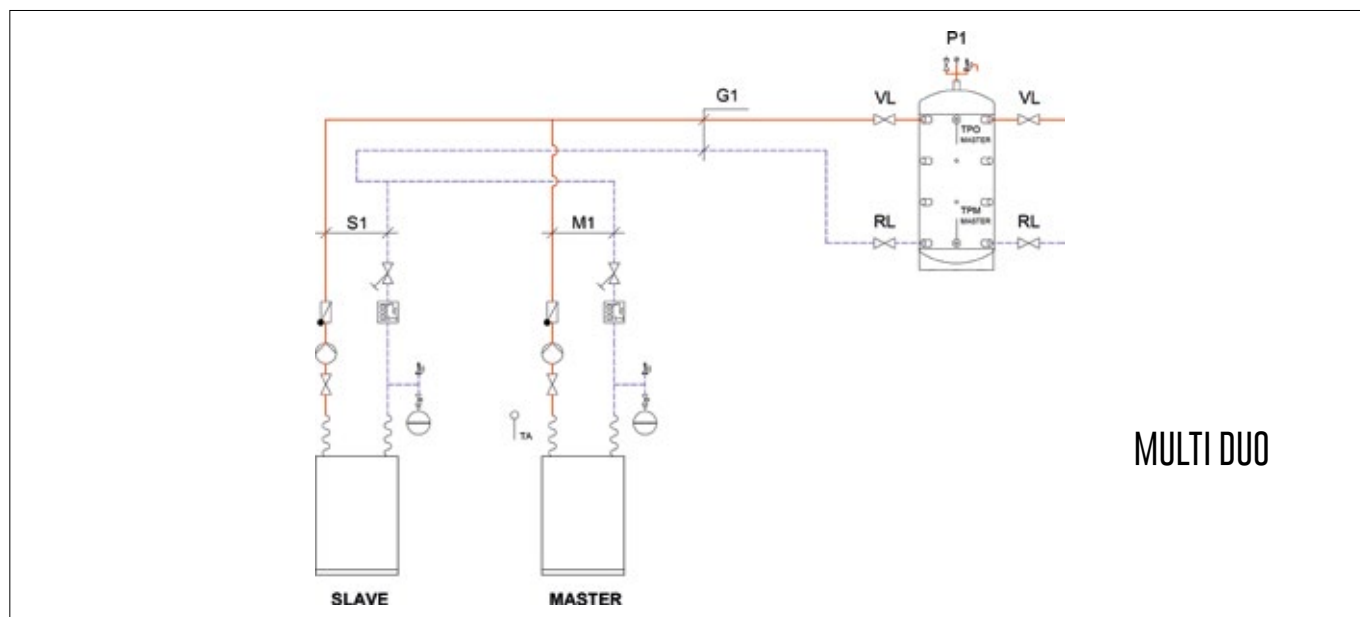
Unit type		TERRA MULTI TRIO 228 HPLA	
Order no.		290849	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 76	13,3	DN 65
Slave (S2)	TERRA 76	13,3	DN 65
Main pipe (B1)		26,6	DN 100 (DN 80)
Overall pipe (G1)		39,9	DN 100
Buffer tank (P1)	PU 3000		DN 100

### CASCADE QUATTRO

Unit type		TERRA MULTI QUATTRO 304 HPLA	
Order no.		290852	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 76	13,3	DN 65
Slave (S2)	TERRA 76	13,3	DN 65
Slave (S3)	TERRA 76	13,3	DN 65
Main pipe (B1)		26,6	DN 100 (DN 80)
Main pipe (B2)		39,9	DN 100
Overall pipe (G1)		53,2	DN 125
Buffer tank (P1)	PU 3000		DN 125

**Note:** The given flow rates and pipe diameters are guide values. A system-specific layout is required.

**P1:** Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



# ENGINEERING AND INSTALLATION INFORMATION: TERRA DX M2/M4

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- The heat pump system can be optimised by increasing the number of collector circuits (COP, SPF).
- The performance figures for the TERRA DX heat pumps apply for the highest possible number of installed geothermal collectors. The values of G4/W35 correspond to the standard value B0/W35 for brine systems (D-A-CH).
- Geothermal collectors from OCHSNER must be used, and OCHSNER will otherwise not commission or warranty the installation.
- Size all pipework cross sections according to the nominal flow rates.
- Observe the limits of use in terms of the heat source and heat sink systems.
- For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
- Ensure an annual inspection of the system according to national and regional regulations.
- As a rule of thumb for the heat sink side: System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]

## HEAT SOURCE SYSTEM

The size of the heat source system is determined by the basic cooling capacity of the heat pump and the specific heat extraction capacity of the ground. Sizing and laying the heat source system is the system installer's responsibility and must be carried out in compliance with OCHSNER guidelines.

### GUIDE VALUES FOR SOIL CONDITIONS <sup>1)</sup>

Soil conditions	Max. spec. extraction capacity at 1800 h/a	Max. spec. extraction capacity at 2400 h/a
Dry, non-cohesive soil	10 W/m <sup>2</sup> and 5 W/lm	8 W/m <sup>2</sup> and 4 W/lm
Cohesive soil, moist	20-30 W/m <sup>2</sup> and 15 W/lm	16-24 W/m <sup>2</sup> and 12 W/lm
Water-saturated soil, sand/gravel	40 W/m <sup>2</sup> and 20 W/lm	32 W/m <sup>2</sup> and 16 W/lm

The max. spec. extraction capacity was calculated as 25 W/m<sup>2</sup> at 1800 h/a or as 20 W/m<sup>2</sup> at 2400 h/a. In the event of deviating soil conditions, the extraction surface must be sized according to actual on-site conditions and hours of operation. Observe the regional and national regulations.

### GUIDE VALUES FOR THE REQUIRED EXTRACTION SURFACE <sup>1)</sup>

Heat pump		TERRA DX 5	TERRA DX 8	TERRA DX 11	TERRA DX 13	TERRA DX 15	TERRA DX 18
Basic cooling capacity (at G4/W35)	kW	4,9	6,9	9,8	11,4	12,9	16,8
Extraction surface (at 1800 h/a) cohesive soil, moist (25 W/m <sup>2</sup> )	m <sup>2</sup>	196	276	392	456	516	672
Extraction surface (at 2400 h/a) cohesive soil, moist (20 W/m <sup>2</sup> )	m <sup>2</sup>	245	345	490	570	645	840
Max. connection line (up to the collection shaft)	lm	20	20	20	20	20	20

### RECOMMENDED NUMBER OF GEOTHERMAL COLLECTORS

One geothermal collector circuit = 75 m copper geothermal collector		TERRA DX 5	TERRA DX 8	TERRA DX 11	TERRA DX 13	TERRA DX 15	TERRA DX 18
Minimum number	pce	3	4	5	6	8	10
Recommended number	pce	4	5	7	8	10	12
Maximum number	pce	5	6	9	10	12	14

<sup>1)</sup> Observe the regional and national regulations (e.g. AT/DE: VDI 4640 and ÖWAV Rule Sheet 207)

## GEOHERMAL COLLECTOR LAYING <sup>1)</sup>

The heat source system is sized according to the heat pump's cooling capacity (type and intended coefficient of performance) and the specific "heat work" required by the regional conditions and installation requirements.

### INSTALLATION DEPTH:

- Approx. 1.2-1.5 m (deeper at extremely high altitudes)
- Approx. 30 cm under frost level

### INSTALLATION AREA:

- As a rule, plan the laying of the collector pipes on horizontal and level subsoil.
- For a collector array with shallow laid collector pipes, the ground must be natural soil that is not raised on one side. Otherwise, the laid collector pipes could become damaged by ground settlement.
- Ensure there is a minimum clearance of 1.5 m between the collector pipes and adjacent components (foundations, water carrying lines, etc.) or property boundaries.
- A level hillside with one side sloped is permissible. The maximum permissible height differential between the highest and lowest point of a collector pipe is 3 m.
- Install the distributor at the lowest point of the collector array.
- In the case of hillsides, lay the collector pipes across the slope.
- A collector array may not be built on.
- The collector pipes must be spaced at least 0.5 m from each other.

### WARNING BAND:

- Lay warning band in the collector array approx. 0.5 m above the collector pipes.

### HANDLING:

- Ensure that the collector pipes do not become buckled or damaged.
- Use a sand bed to provide adequate protection to prevent the collector pipes being covered with soil.

### REFRIGERANT/REFRIGERANT OIL:

The use of chlorine-free safety refrigerants means that a biologically degradable synthetic oil (e.g. ester oil) can be used, thus practically eliminating even theoretically possible harm to the environment.

### PIPE LENGTHS:

Collector circuits with a standard length of 75 m must be fully utilised for the extraction of heat and may be shortened only by OCHSNER customer service or authorised OCHSNER customer service partners. Collector circuits are laid in airtight conditions in order to prevent the penetration of moisture.

- Ensure that the ends of the collector pipes each protrude approx. 0.7 m in the installation space for the indoor unit or approx. 1.2 m into the collection shaft, if installed.
- Mark the ends of the collector pipes to indicate which collector circuit they belong to.
- Ensure the collector pipe ends are pointing upwards.

### SAFETY EQUIPMENT:

Direct evaporation systems are fitted with solenoid valves for added safety: in the event of a fall in pressure in the collector system, a safety low pressure controller triggers a lock on the collector circuits. The closing of the solenoid valves means that refrigerant can no longer reach the geothermal collector from the heat pump.

### GEOHERMAL COLLECTORS:

The O-Tube Pro geothermal collectors are filled at the factory with nitrogen and each have a leakage indicator, which enables simple leakage monitoring during laying right up to the checks prior to commissioning.



### SCREED DRYING

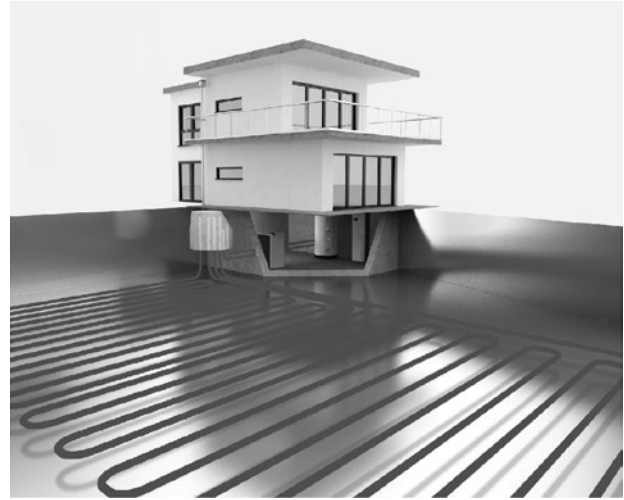
The drying of flooring screed by means of the heat pump is not permitted for ground-connected systems. In such cases, screed can be dried using the electric immersion heater in the heat pump buffer tank or mobile drying units. Installation and adjustment of the controller are the responsibility of the system installer, taking into account the requirements of the relevant standards and in consultation with the flooring contractor. Possible OTE controller settings can be found in the OTE system partner operating manual.

# ENGINEERING AND INSTALLATION INFORMATION: TERRA DX M2/M4

## ROUTING PLAN IN CASE OF HORIZONTAL COLLECTORS:

A laying plan of the individual collector circuits based on the actual laying is required for commissioning.

Place the collection shaft with the Venturi distributor as close as possible to the indoor unit and at the lowest point.



## COLLECTION SHAFT AND VENTURI DISTRIBUTORS:

A collection shaft is to be provided with extensive collector systems and/or if the collector system is not directly connected to the wall conduit. The Venturi distributor and header are installed in this shaft. The collection shaft can be made inexpensively by using readily available concrete rings. For accessibility reasons, the internal diameter of the shaft must not be less than 150 cm. The cone is to be set after the connection line has been completely installed. The collection shaft must be dry (drainage) and/or sealed against water in saturated ground. Observe the national and regional regulations.

The connection line from the building to the collection shaft is to be run in a pipe liner and be thermally insulated. This pipe liner is to be laid straight and with a slight slope in the direction of the collection shaft in order to dispose of any condensate which may form.

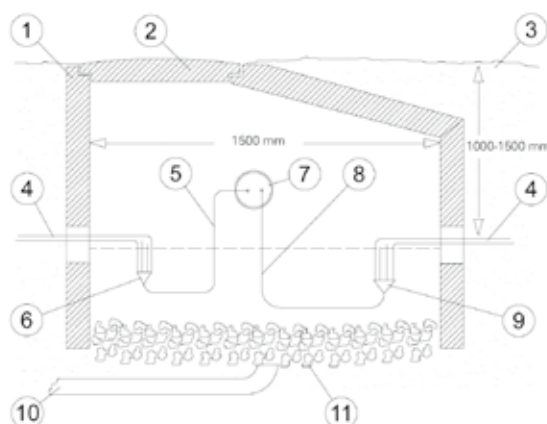
- Install the collection shaft at the lowest point of the collector array
- The max. length of the connection line between the indoor unit and the collection shaft is 20 m.
- Max. height differential between the highest and lowest points of the refrigerant lines is 3500 mm.
- Maximum 8 pipe bends, formed with a suitable bending tool (bending radius = 5 x pipe diameter).
- Never use pipe angle pieces.
- Bending radii of  $\geq 1$  m are considered as straight runs.
- With a suction gas line comprising 2 or 3 pipes, all pipes must be the same length.

## WALL CONDUITS:

Wall conduits must be constructed using pipe liners in accordance with engineering standards. Care must be taken over sealing between the pipe liner and wall, as well as between the liner and the connection lines. In areas vulnerable to flooding, sealing must conform to the requirements for water pressure.

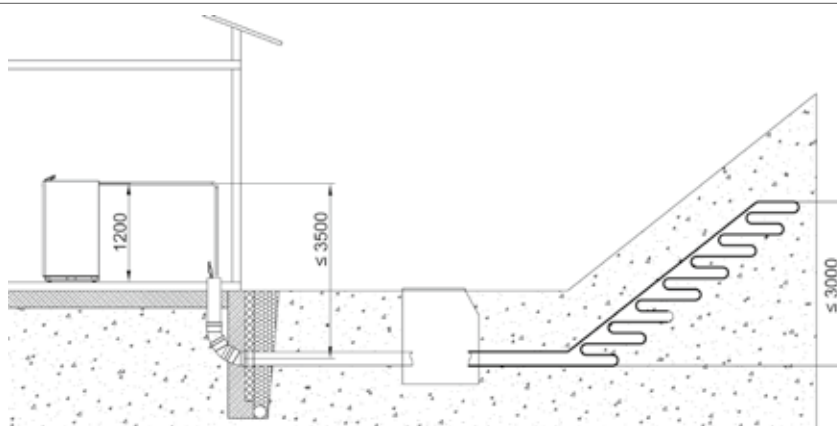
Connection lines must be installed with a slight fall towards the outside, in the direction of the collection shaft. Pipes leading into the building must be designed so that it is possible to seal them on a permanent basis in accordance with the latest engineering standards. Particular care must be taken over sealing in areas vulnerable to flooding or water pressure!

## COLLECTION SHAFT

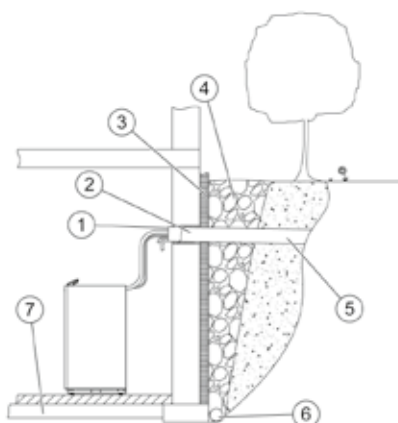


- 1) Concrete ring (diameter min. 1500 mm), shaft depth min. 2000 mm
- 2) Access (diameter min. 800 mm)
- 3) Sand bed
- 4) Collector pipes
- 5) Suction gas line (diameter 22-34 mm)
- 6) Suction gas header
- 7) Pipe liner to building (diameter min. 150 mm)
- 8) Liquid line (diameter 12-16 mm)
- 9) Liquid distributor
- 10) Drainage
- 11) Gravel

## PERMISSIBLE HEIGHT DIFFERENTIALS



## WALL CONDUITS



- 1) Appropriately sealed wall conduit
- 2) Appropriate sealing of the refrigerant lines as they pass through the pipe liner
- 3) Insulation
- 4) Gravel
- 5) Pipe liner (with min. 2% fall to outside)
- 6) Drainage
- 7) Foundation

# SIZING THE HEAT SINK SYSTEM: TERRA DX M2/M4

## FOR GROUND SOURCE HEAT PUMPS (DIRECT)

Hydraulic versions		Electric immersion heater		3-way switching module	
		Internal	external	Internal	external
M2-1	M4-1	x		x	
M2-2	M4-2		x	x	
M2-3	M4-3	x			x
M2-4	M4-4		x		x

**M2**

Unit type	TERRA DX 5				TERRA DX 8			TERRA DX 11		
Connection dimension	inch	DN 32 1 1/4" male			DN 32 1 1/4" male			DN 32 1 1/4" male		
WNA circulation pump	Yonos Para HPS 25/7.5				Yonos Para HPS 25/7.5			Yonos Para HPS 25/7.5		
		Internal			Internal			Internal		
Pump delivery head	mbar	767	776	783	718	767	777	535	717	768
Spread at G-1/W35	K	5	7	10	5	7	10	5	7	10
Flow rate	m³/h	1,07	0,76	0,54	1,48	1,06	0,74	2,2	1,57	1,1
		100%	70%	50%	100%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	197	101	49	264	135	66	324	165	81
Internal pressure loss M4-4	mbar	-	-	-	-	-	-	-	-	-
Residual head I M2-1; M4-1	mbar	569	676	734	455	632	711	211	551	687
Residual head I M4-4 for cascade	mbar	-	-	-	-	-	-	-	-	-
Additional 3-way switching module	mbar	External DN32 kvs16			External DN32 kvs16			External DN32 kvs16		
Pressure loss	mbar	4	2	1	9	4	2	19	10	5
External PHE for DHW		PHE 2007 A=1" B=1"			PHE 2007 A=1" B=1"			PHE 2007 A=1" B=1"		
Primary pressure loss, side A (HP)	mbar	34	17	9	65	33	16	77	39	19
Secondary pressure loss, side B (DHW)	mbar	71	36	18	72	37	18	26	13	7

## LIMITS OF USE

Unit type	TERRA DX 5				TERRA DX 8			TERRA DX 11		
		5K	7K	10K	5K	7K	10K	5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)										
tf-max HP heating	°C	65	65	65	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60	60	60	60
tf-max HP cooling	°C	-	-	-	-	-	-	-	-	-
tf-min WNA cooling	°C	-	-	-	-	-	-	-	-	-

HP = heat pump  
PHE = plate heat exchanger  
DHW = domestic hot water

WNA = heat sink system  
LT = low temperature  
MT = medium temperature

HT = high temperature  
male = male thread  
kvs = kvs value





M2



M4

Unit type		TERRA DX 13			TERRA DX 15			TERRA DX 18		
Connection dimension	inch	DN 32 1 1/4" male			DN 40 1 1/2" male			DN 40 1 1/2" male		
WNA circulation pump		Yonos Para HPS 25/7.5			Stratos Para 25/1-8			Stratos Para 25/1-8		
		Internal			Internal			Internal		
Pump delivery head	mbar	426	638	762	729	727	725	668	729	726
Spread at G-1/W35	K	5	7	10	5	7	10	5	7	10
Flow rate	m <sup>3</sup> /h	2,44	1,74	1,22	2,75	1,96	1,375	3,57	2,55	1,785
		100%	70%	50%	100%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	mbar	577	294	144	382	195	95	534	273	134
Internal pressure loss M4-4	mbar	-	-	-	319	163	80	429	219	107
Residual head I M2-1; M4-1	mbar	-151	344	618	347	532	629	133	456	592
Residual head I M4-4 for cascade	mbar	-	-	-	410	564	645	239	510	619
Additional 3-way switching module	mbar	External DN32 kvs16			External DN40 kvs25			External DN40 kvs25		
Pressure loss	mbar	23	12	6	12	6	3	20	10	5
External PHE for DHW		PHE 5007 A=1 1/4" B=1"			PHE 5007 A=1 1/4" B=1"			PHE 5007 A=1 1/4" B=1"		
Primary pressure loss, side A (HP)	mbar	37	19	9	47	24	12	65	33	16
Secondary pressure loss, side B (DHW)	mbar	48	24	12	80	41	20	90	46	23

## LIMITS OF USE

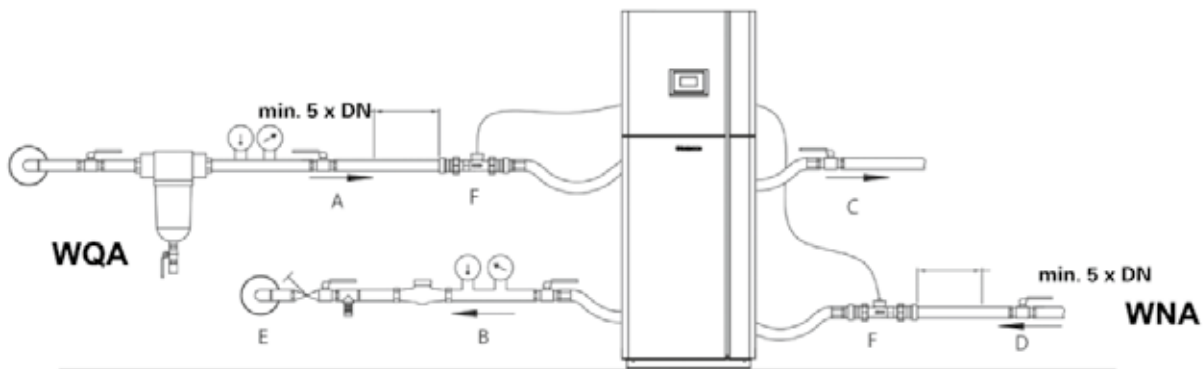
Unit type		TERRA DX 13			TERRA DX 15			TERRA DX 18		
		5K	7K	10K	5K	7K	10K	5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)										
tf-max HP heating	°C	65	65	65	65	65	65	65	65	65
tf-max WNA heating	°C	60	60	60	60	60	60	60	60	60
tf-max HP cooling	°C	-	-	-	-	-	-	-	-	-
tf-min WNA cooling	°C	-	-	-	-	-	-	-	-	-

# ENGINEERING AND INSTALLATION INFORMATION: AQUA M4/M6

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- The operation of a water/water heat pump is at the discretion of the system installer and/or operator and must take into account the limits of use and OCHSNER guidelines.
  - Size all pipework cross sections according to the nominal flow rates.
  - Observe the limits of use in terms of the heat source and heat sink systems.
  - On water/water heat pumps, observe the limits of use of the heat source system's heat exchanger.
  - For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
  - Ensure an annual inspection of the system according to national and regional regulations.
  - Flow meters for the purpose of flow monitoring are supplied with the heat pump. These are to be installed immediately upstream of the flexible connection hoses, as per the installation manual. A suitable filter (OCHSNER accessories) is to be provided on the source side.
  - The heat pump must be switched off in order to clean the filter of the heat source system.
  - For reasons of operational reliability, do not use automatic or semi-automatic filter systems.
  - A water analysis always only represents a momentary snapshot. Values can vary considerably over the course of a year. We recommend checking the water quality annually, according to the relevant standards. OCHSNER accepts no liability for the quality of water used as a heat source or any damage that may occur.
  - As a rule of thumb for the heat sink side:
    - System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]
    - System charge pressure for cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]
- A suitable filter (OCHSNER accessories) is to be provided on the

## HYDRAULIC CONNECTION FOR AQUA M6:



- A) Heat source inlet
- B) Heat source outlet
- C) Heat sink, flow
- D) Heat sink, return
- E) Circuit balancing valve, not supplied
- F) Flow meter

- WQA) Heat source system
- WNA) Heat sink system

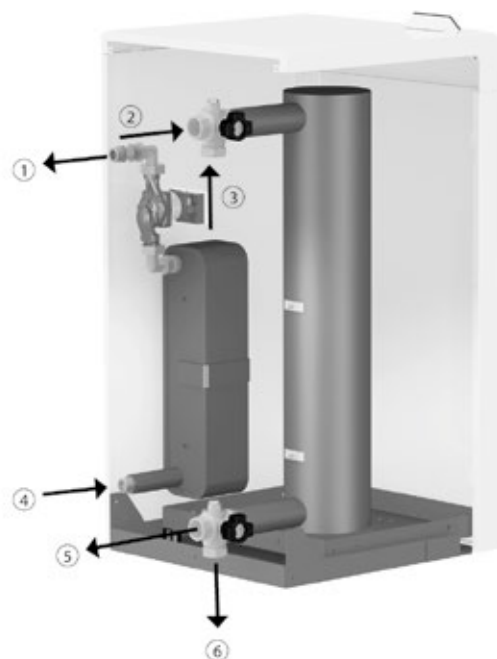


## HEAT EXCHANGER OF THE HEAT SOURCE SYSTEM

### SHELL AND TUBE HEAT EXCHANGER:

- Robust design with increased wall thickness for a long service life under demanding conditions due to water quality.
- Service valves (DN 32) with flushing nozzles (DN 32) for flushing the shell and tube heat exchanger or heat source system according to the relevant standards are optionally available.

- 1) Heat sink flow (1 1/4" male)  
2) Heat source flow (1 1/4" female)  
3) Flow flushing connection (6/4" male)  
4) Heat sink return (1 1/4" male)  
5) Heat source return (1 1/4" female)  
6) Return flushing connection (6/4" male)



### LIMITS OF USE OF THE HEAT EXCHANGER:

Heat exchanger limits of use			Plate heat exchanger		Shell and tube heat exchanger
			Soldered copper	Stainless steel soldered	Stainless steel
El. conductivity	$\mu\text{S/cm}$	> 500	–	+	
		50 - 2500			+
pH value		< 6	0	0	0
		6 - 8	+	+	+
		> 8	–	0	0
Chloride	mg/l	< 100	+	+	+
		100 – 200	0	+	+
		> 200	–	- 2)	0
Sulphate	mg/l	< 50	+	+	+
		50 – 100	0	+	–
		> 100	–	0	–
Carbon dioxide (free aggressive)	mg/l	< 5	+	+	+
		5 – 20	0	+	+
		> 20	–	0	–
Oxygen	mg/l	< 1	+	+	+
		1 – 8	0	+	+
		> 8	–	+	0
Ammonium	mg/l	< 2	+	+	+
		2 – 20	0	+	–
		> 20	–	+	–
Iron with manganese <sup>1)</sup>	mg/l	< 0.2	+	+ <sup>2)</sup>	+
		0.2 - 0.5	–	–	+
		> 0.5	–	–	–
Manganese <sup>1)</sup>	mg/l	> 0.05	–	- 2)	0
Sulphide	mg/l	< 5	+	+	+
Chlorine (free)	mg/l	< 0.5	+	+	+

- + = The material has generally good resistance  
– = We advise against use  
0 = Corrosion may occur if several factors are rated 0

<sup>1)</sup> Due to anticipated iron oxide formation, we advise against the use of a water/water heat pump.

<sup>2)</sup> The limits of use of a stainless steel soldered plate heat exchanger are largely determined by, in addition to iron and manganese, the concentrations of chlorides.

# ENGINEERING AND INSTALLATION INFORMATION: AQUA M4/M6

## SUBMERSIBLE PUMPS OF THE HEAT SOURCE SYSTEM

The submersible pumps are multi stage 3" pumps with external inverter for demand-dependent flow adjustment. With integral soft start function, dry-run, overload and overheating protection.

When selecting the correct submersible pump, the geodetic delivery head and friction losses, including pipework components and fittings, must be taken into account with regard to the required nominal flow rate of the relevant heat pump.

Internal pressure losses, including original OCHSNER accessories, have been taken into account when specifying the residual head. When using a centrifugal filter, the pressure differential of 800 mbar necessary for this function must be taken into account. A circuit balancing valve for hydronic balancing is to be installed and adjusted in the system in order to provide economic and safe operation.

### Scope of delivery:

- Inverter integrated in the submersible pump (set with mobile control unit)
- Steel rope
- 20 m cable



## MOBILE CONTROL UNIT FOR THE SUBMERSIBLE PUMPS

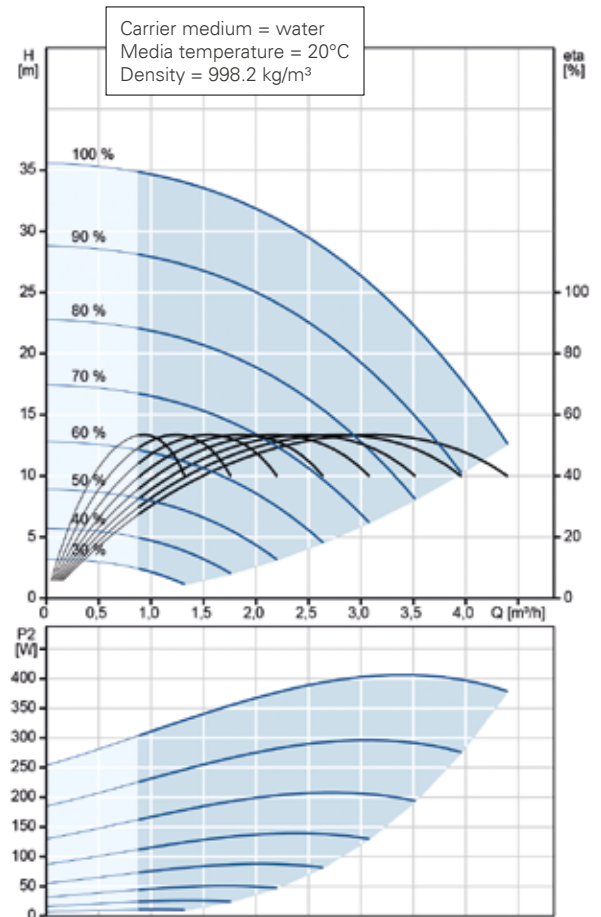
The mobile control unit is not supplied with the product as these are carried by OCHSNER customer service and are used only for calibration during commissioning. The settings are stored in the submersible pump's electronics.

Permanent monitoring of the flow rate continues to be handled by the flow meter of the heat pump controller. A suitable circuit balancing valve is still necessary for fine hydronic balancing.



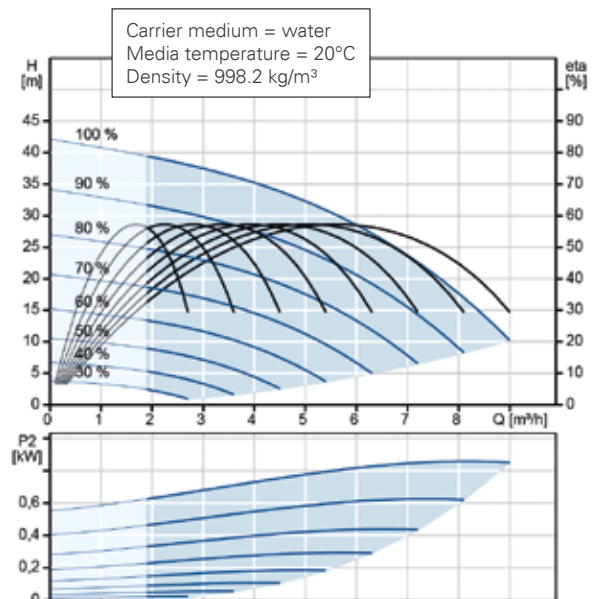
## SUBMERSIBLE PUMP I, SPEED CONTROLLED

1x 230 V, 50 Hz, 3"



## SUBMERSIBLE PUMP II, SPEED CONTROLLED

1x 230 V, 50 Hz, 3"





# SIZING THE HEAT SOURCE SYSTEM: AQUA M4/M6

## FOR HEAT PUMPS WITH WATER AS HEAT SOURCE

**M4**

Unit type		AQUA 7	AQUA 11	AQUA 14	AQUA 17	AQUA 22	AQUA 36
Connection dimension	inch	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male	DN 32 1 1/4" male
Nominal flow rate – source	m³/h	1,2	1,8	2,2	3,0	3,9	5,0
Pressure loss internal	mbar	36	72	125	205	326	608
WQA heat exchanger type		Tube bundle	Tube bundle	Tube bundle	Tube bundle	Tube bundle	Plate heat exchanger
Pressure loss – filter	mbar	40	50	100	30	40	10
Flow meter pressure loss	mbar	-	-	-	-	-	-

### SUBMERSIBLE PUMP I

Speed controlled

Order no. 290605

Delivery head	m	10 – 33	10 – 33	6 – 29	6 – 26	10 – 17	–
Residual head	m	7 - 30 <sup>1)</sup>	7 - 30 <sup>1)</sup>	2 - 25 <sup>1)</sup>	3 - 23 <sup>1)</sup>	8 - 12 <sup>1)</sup>	–
Efficiency	%	58	58	58	58	58	–

### SUBMERSIBLE PUMP II

Speed controlled

Order no. 290606

Delivery head	m	14 – 39	14 – 39	13 – 38	12 – 37	14 – 33	15 – 32
Residual head	m	12 - 37 <sup>1)</sup>	12 - 37 <sup>1)</sup>	9 - 34 <sup>1)</sup>	9 - 34 <sup>1)</sup>	10 - 29 <sup>1)</sup>	9 – 27
Efficiency	%	50	50	58	58	58	58

**M6**

Unit type		AQUA 54	AQUA 97
Connection dimension	inch	DN 50 2" male	DN 50 2" male
Nominal flow rate – source	m³/h	9,6	17,1
Pressure loss internal	mbar	60	81
Pressure loss – filter	mbar	10	40
Flow meter pressure loss	mbar	60	180

<sup>1)</sup> Residual head for pumps according to OCHSNER recommendation. Depending on requirements, one of the submersible pumps can be individually selected for sizing the heat source system.

# SIZING THE HEAT SINK SYSTEM: AQUA M4

## FOR HEAT PUMPS WITH WATER AS HEAT SOURCE

Hydraulic versions	Electric immersion heater		3-way switching module	
	Internal	external	Internal	external
M4-1	x		x	
M4-2		x	x	
M4-3	x			x
M4-4	M6	x		x



**M4**

Unit type	AQUA 7			AQUA 11		AQUA 14	
Connection dimension	inch	DN 32 - 1 1/4" male		DN 32 - 1 1/4" male		DN 32 - 1 1/4" male	
WNA circulation pump	Yonos Para 25/8			Yonos Para 25/8		Yonos Para 25/8	
		Internal		Internal		Internal	
Pump delivery head 90%	mbar	720	720	603	720	531	630
Operating point		W10/W35	W10/W60	W10/W35	W10/W60	W10/W35	W10/W60
Spread	K	5	7	5	7	5	7
Flow rate	m³/h	1,19	0,85	1,72	1,23	2,12	1,51
Internal pressure loss M4-1	mbar	65	33	106	54	133	67
Internal pressure loss M4-4	mbar	55	28	84	43	100	51
Residual head I M4-1	mbar	655	687	497	666	398	563
Residual head I M4-4	mbar	665	692	519	677	431	579
External PHE for DHW		2007		2007		2007	
Dimension/primary pressure loss, side A (HP)	mbar	1"	10	1"	19	1"	35
Dimension / secondary pressure loss, side B (DHW)	mbar	1"	13	1"	25	1"	46
		tf-max HP heating	tf-max WNA heating	tf-max HP heating	tf-max WNA heating	tf-max HP heating	tf-max WNA heating
Limits of use	°C	65	60	65	60	65	60

Unit type	AQUA 17			AQUA 22		AQUA 36	
Connection dimension	inch	DN 32 - 1 1/4" male		DN 32 - 1 1/4" male		DN 32 - 1 1/4" male	
WNA circulation pump		Stratos Para 25/1-8		Stratos Para 25/1-8		Stratos Para 25/1-12	
		Internal		Internal		Internal	
Pump delivery head 90%	mbar	666	729	576	666	900	1062
Operating point		W10/W35	W10/W60	W10/W35	W10/W60	W10/W35	W10/W60
Spread	K	5	7	5	7	5	7
Flow rate	m³/h	2,85	2,04	3,8	2,72	6,1	4,34
Internal pressure loss M4-1	mbar	230	118	404	206	-	-
Internal pressure loss M4-4	mbar	169	87	296	151	685	346
Residual head I M4-1	mbar	436	611	172	460	-	-
Residual head I M4-4	mbar	497	642	280	515	215	716
External PHE for DHW		5007		5007		6007	
Dimension/primary pressure loss, side A (HP)	mbar	1 1/4"	12	1 1/4"	23	1 1/4"	25
Dimension/secondary pressure loss, side B (DHW)	mbar	1"	16	1"	30	1"	38
		tf-max HP heating	tf-max WNA heating	tf-max HP heating	tf-max WNA heating	tf-max HP heating	tf-max WNA heating
Limits of use	°C	65	60	65	60	65	60



# SIZING THE HEAT SINK SYSTEM: AQUA M6

FOR HEAT PUMPS WITH WATER AS HEAT SOURCE



**M6**

Unit type		AQUA 54		AQUA 97	
Connection dimension	inch	DN 50 - 2" male		DN 50 - 2" male	
WNA circulation pump		Stratos 40/1-8		Stratos 65/1-12	
		external		external	
Pump delivery head	mbar	612	720	855	945
<b>Operating mode</b>		<b>H/C</b>	<b>DHW</b>	<b>H/C</b>	<b>DHW</b>
Operating point		W10/W35	W15/W50	W10/W35	W15/W50
Spread	K	5	7	5	7
Flow rate	m³/h	9,2	5,2	16,9	10
Pressure loss – internal	mbar	60	25	75	30
<b>Flow meter</b>		<b>FM-DN50 kvs 40</b>		<b>FM-DN50 kvs 40</b>	
Pressure loss	mbar	53	17	178	62,5
Residual head I	mbar	499	678	602	853
<b>3-way switching module</b>		<b>External DN50 kvs40</b>		<b>External DN50 kvs40</b>	
Pressure loss	mbar	53	17	178	63
<b>External PHE for DHW</b>		<b>9507</b>		<b>9609</b>	
Dimension / pressure loss – heating	mbar	2"	47	2"	98
Dimension / pressure loss – DHW	mbar	2"	43	2"	92

Residual head for heating with one 3-way switching module for DHW heating / residual head for heating circuit with two 3-way switching modules for DHW heating



# ENGINEERING AND INSTALLATION INFORMATION: AQUA MULTI M6

Excerpts from the operating and installation manual are reproduced below. For detailed engineering and installation information, see the product-specific operating and installation manual (see Download area on the OCHSNER website).

- The operation of a water/water heat pump is at the discretion of the system installer and/or operator and must take into account the limits of use and OCHSNER guidelines.
- Size all pipework cross sections according to the nominal flow rates.
- Observe the limits of use in terms of the heat source and heat sink systems.
- On water/water heat pumps, observe the limits of use of the heat source system's heat exchanger.
- For operational reliability, ensure sufficient sizing of the hydraulic safety and pressure maintaining devices.
- Ensure an annual inspection of the system according to national and regional regulations.
- The heat pump must be switched off in order to clean the filter of the heat source system.
- For reasons of operational reliability, do not use automatic or semi-automatic filter systems.
- Flow meters for the purpose of flow monitoring are supplied with the heat pump. These are to be installed immediately upstream of the flexible connection hoses, as per the installation manual. A suitable filter (OCHSNER accessories) is to be provided on the source side.
- A water analysis always only represents a momentary snapshot. Values can vary considerably over the course of a year. We recommend checking the water quality annually, according to the relevant standards. OCHSNER accepts no liability for the quality of water used as a heat source or any damage that may occur.
- See the associated hydraulic schematics 01-009 and 01-011.
- As a rule of thumb for the heat sink side:
  - System charge pressure for heating mode [bar] = DEV pre-charge pressure + 0.3 [bar]
  - System charge pressure for cooling mode [bar] = DEV pre-charge pressure + 0.5 [bar]

## HEAT SINK SYSTEM: FLOW RATES AND PIPE DIMENSIONS

### CASCADE DUO

Unit type		AQUA MULTI DUO 194 HPLA	
Order no.		290856	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 97	16,9	DN 80
Overall pipe (G1)		33,8	DN 100
Buffer tank (P1)	PU 3000		DN 100

### CASCADE TRIO

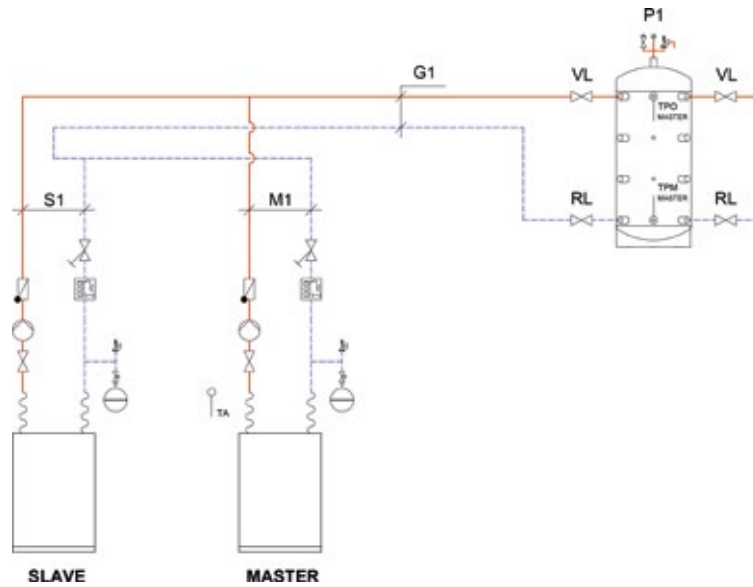
Unit type		AQUA MULTI TRIO 291 HPLA	
Order no.		290859	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 97	16,9	DN 80
Slave (S2)	AQUA 97	16,9	DN 80
Main pipe (B1)		33,8	DN 100
Overall pipe (G1)		50,7	DN 100
Buffer tank (P1)	PU 3000		DN 100

### CASCADE QUATTRO

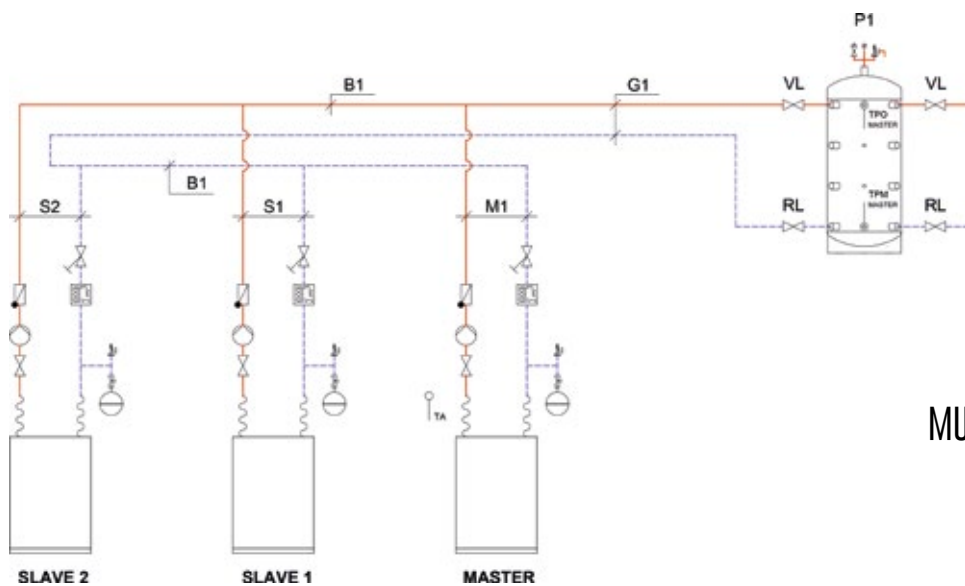
Unit type		AQUA MULTI QUATTRO 388 HPLA	
Order no.		290862	
	Unit type	Flow rate	Pipe diameter
		m³/h	mm
Master (M1)	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 97	16,9	DN 80
Slave (S2)	AQUA 97	16,9	DN 80
Slave (S3)	AQUA 97	16,9	DN 80
Main pipe (B1)		33,8	DN 100
Main pipe (B2)		50,7	DN 100
Overall pipe (G1)		67,6	DN 125
Buffer tank (P1)	PU 3000		DN 125

**Note:** The given flow rates and pipe diameters are guide values. A system-specific layout is required.

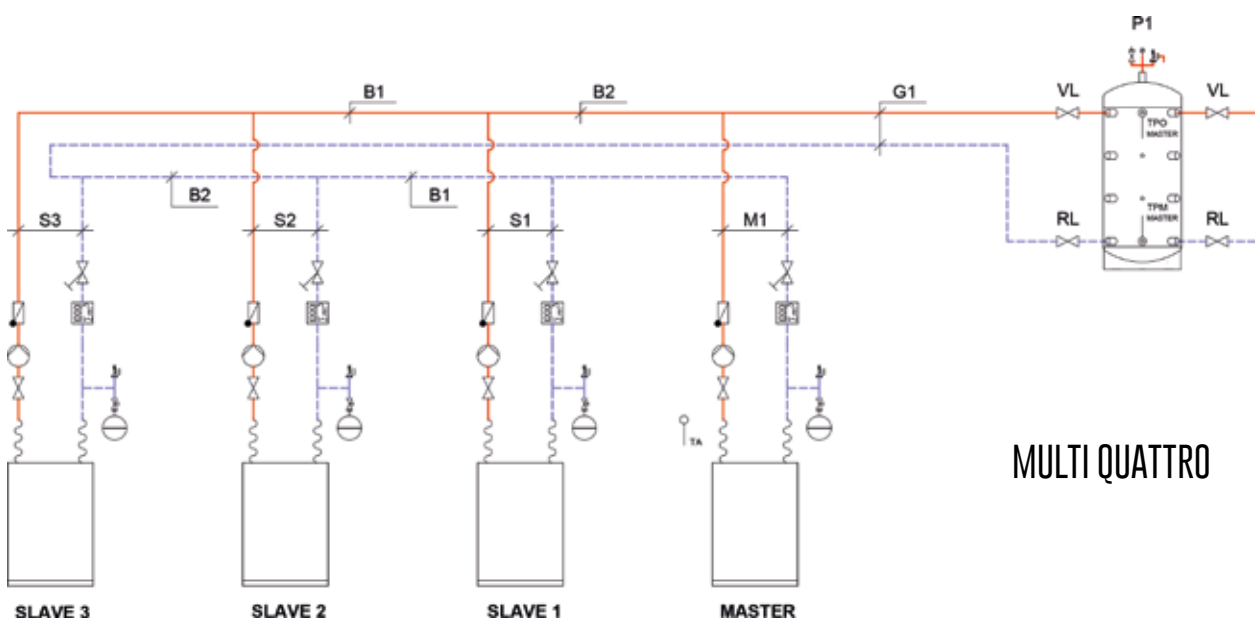
**P1:** Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



MULTI DUO



MULTI TRIO



MULTI QUATTRO

# OCHSNER CUSTOMER SERVICE

## YEAR-ROUND AVAILABILITY

**FROM THE MINUTE YOUR HEAT PUMP SYSTEM IS IN OPERATION, THE OCHSNER CUSTOMER SERVICE PROVIDES YOU WITH RELIABLE EXPERT SERVICE. THE OCHSNER CUSTOMER SERVICE ENSURE THAT YOUR OCHSNER HEAT PUMP RUNS RELIABLY AT ALL TIMES.**

### COMMISSIONING

Our customer service team commissions the OCHSNER heating heat pump and provides on-site system training for the end customer. The new heat pump system is matched to individual circumstances and usage conditions. The checklists and forms required for a commissioning request can be found in the customer service area of the OCHSNER Partnernet.

### REPAIRS

Any necessary repairs to OCHSNER heat pumps are carried out by our Customer Service engineers, who are qualified electricians and refrigeration and heating specialists.

### SPARE PARTS

Our Customer Service engineers always carry the most frequently needed spare parts in their service vehicles. More than 2000 products are also available immediately for express dispatch from our central spare parts warehouse.

### LEAKAGE TEST

Heat pumps are classed as refrigeration equipment and are partially subject to the provisions of the F-gas Regulation (EU 517/2014). The OCHSNER Customer Service would be pleased to carry out any required tests. Please check the terms on our website at [www.ochsner.com](http://www.ochsner.com).



# COMMISSIONING

Note that the commissioning price valid at the time when commissioning is carried out will be invoiced.

<b>AIR M2 / M4 / M6</b>	<b>Order no.</b>	<b>Price €</b>
AIR 11, GMLW 9	801115	1.066,-
AIR 18, GMLW 14	801106	1.281,-
AIR 23, GMLW 19	801107	1.388,-
AIR 29, GMLW 25	801108	1.712,-
AIR 41, GMLW 35	801109	1.927,-
AIR 80	801104	4.295,-
AIR MULTI DUO 82	801461	3.854,-
AIR MULTI TRIO 123	801462	5.675,-
AIR MULTI QUATTRO 164	801463	7.497,-

<b>AIR FALCON / HAWK / EAGLE</b>	<b>Order no.</b>	<b>Price €</b>
AIR FALCON 212	801111	914,-
AIR EAGLE 414, AIR EAGLE 717	801114	1.388,-
AIR HAWK 208	801458	893,-

<b>AIR STATION</b>	<b>Order no.</b>	<b>Price €</b>
OLWI 9, OLWI 13, OLWI 18	801112	742,-

<b>TERRA M2 / M4</b>	<b>Order no.</b>	<b>Price €</b>
TERRA 6	801420	635,-
TERRA 8	801421	635,-
TERRA 11	801422	635,-
TERRA 14	801423	635,-
TERRA 18	801424	635,-
TERRA 27	801432	635,-

<b>TERRA M6</b>	<b>Order no.</b>	<b>Price €</b>
TERRA 40	801415	958,-
TERRA 76	801417	958,-
TERRA MULTI DUO 152	801451	1.238,-
TERRA MULTI TRIO 228	801454	1.856,-
TERRA MULTI QUATTRO 304	801457	2.476,-

<b>TERRA DX</b>	<b>Order no.</b>	<b>Price €</b>
TERRA DX 5	801425	1.066,-
TERRA DX 8	801426	1.066,-
TERRA DX 11	801427	1.173,-
TERRA DX 13	801428	1.173,-
TERRA DX 15	801429	1.388,-
TERRA DX 18	801430	1.496,-

<b>AQUA M4</b>	<b>Order no.</b>	<b>Price €</b>
AQUA 7	801433	635,-
AQUA 11	801302	635,-
AQUA 14	801305	635,-
AQUA 17	801307	635,-
AQUA 22	801309	635,-
AQUA 36	801313	635,-

<b>AQUA M6</b>	<b>Order no.</b>	<b>Price €</b>
AQUA 54	801315	958,-
AQUA 97	801317	958,-
AQUA MULTI DUO 194	801441	1.238,-
AQUA MULTI TRIO 291	801444	1.856,-
AQUA MULTI QUATTRO 388	801447	2.476,-

## CANCELLING COMMISSIONING

If the conditions necessary for commissioning (see previous section) are not fulfilled, commissioning may have to be cancelled, which can result in additional costs. If commissioning is cancelled by the system installer or the end customer, this will be invoiced by OCHSNER. A cancelled customer service visit will be invoiced for according to actual work carried out (a fixed cancellation fee will be charged as a minimum).

	<b>Price €</b>
Costs for commissioning cancellation	<b>according to actual work carried out</b>
Min. costs (fixed cancellation fee)	<b>210,-</b>

# REQUIREMENTS FOR COMMISSIONING

## BEFORE COMMISSIONING, THE SYSTEM INSTALLER MUST ENSURE THE FOLLOWING:

- The design and installation of the system have been approved by OCHSNER.
- The machine-specific engineering and installation information has been observed (system installed according to OCHSNER standard hydraulic schematics or an OCHSNER special hydraulic system).
- The lifting slings on the front of the indoor unit have been removed.
- The minimum area of clear floor space in the installation room for the indoor unit has been observed.
- For heat pumps with OTE controller:
  - The system datasheet is available and has been fully and correctly completed.
- For air/water heat pumps:
  - The outdoor unit has been correctly installed and bolted to the foundation.
  - If there is a snow cover, it has been correctly installed on the outdoor unit.

### 1. The heat sink system is fully ready (heating and DHW heating).

- The hydraulic pipework has been correctly dimensioned and installed so that the required flow rates can be set.
- The heat sink system has been flushed, filled and vented according to the relevant standards.
- System fill water of a quality compliant with the relevant standards (VDI 2035) is assured.
- The operating pressure has been set (0.8-2.0 bar).
- The system temperature or the buffer temperature must be at least 15°C at the time of commissioning.

#### Note:

If the minimum system temperature or the buffer temperature is not achieved, then the refrigerant charge cannot be set correctly. Non-compliance with the minimum system temperature or the buffer temperature will lead to commissioning being cancelled. If necessary, use preheating on site.

- The necessary safety devices are in place and have been adjusted and checked according to system requirements.
- A DHW tank is present and has been filled for commissioning.
- All shut-off valves have been opened, adjusted and checked.
- The flow meters installed on site have been checked for correct function.
- The system has been hydraulically balanced.

### 2. The heat source system has been prepared.

- If hydraulic pipework is fitted on the heat source side, it has been correctly dimensioned and installed so that the required flow rates can be set.
- The necessary safety devices are in place and have been adjusted and checked according to system requirements.
- The wall conduit has been properly sealed.
- In the case of air/water and direct evaporation/water heat pumps, if the laying of the connection lines has been contractually agreed by the system installer:
  - The refrigerant lines between the indoor and outdoor units have been correctly routed in accordance with refrigeration engineering guidelines.
  - The refrigerant lines have been correctly channelled through the

wall conduits with some surplus length between the connections at the indoor and outdoor units.

- In the case of brine/water heat pumps:
  - The system pressure and addition of frost protection additive (between -12°C and -15°C) have been assured.
  - The heat source system has been flushed, filled and vented according to the relevant standards.
- In the case of water/water heat pumps:
  - All filters have been checked and cleaned.
  - The water quality is in accordance with OCHSNER guidelines.

#### Note:

OCHSNER accepts no liability for damage (e.g. to plate heat exchangers) caused by poor water quality.

### 3. The electrical installation has been completed.

#### Note:

Temporary electrical installations are not permissible and will lead to commissioning being cancelled.

- Electrical connection and installation work has been carried out, checked and completed in accordance with national and regional regulations.
- The indoor unit and an existing outdoor unit are wired correctly.
- The indoor unit is correctly earthed. (Main supply, controller supply, equipotential bonding of the refrigerant lines via the equipotential bonding connection)
- The three-phase supply has been checked to ensure a clockwise rotating field.
- For air/water heat pumps:
  - The outdoor unit is correctly wired.
  - The outdoor unit is correctly earthed (outdoor unit supply).

### 4. On site requirements

- An authorised and technically competent representative of the system installer (the heating or electrical contractor) is present along with the system user during the commissioning.
- Customer-specific controller settings are available (heating curve and functional logic).
- Where connections are in a shaft or on the roof, an assistant is provided by the customer.
- Climbing aids and fall protection (compliant attachment points) are provided on site in accordance with the relevant standards.
- Vehicle access to the heat pump system is available.
- For heat pumps with OTS controller:
  - The heat pump has a stable internet connection.

**Note:**

OCHSNER Customer Service or a customer service partner carries out customer-specific settings according to the system installation specifications. If the system installer is not present during commissioning, or the corresponding specifications are not available, the system is commissioned using the factory settings of the controller. OCHSNER will accept no responsibility for any faulty operation (too low a heating curve, too high a bivalent point, etc.). Any additional work required will be charged to the system installer.

**SYSTEM COMPLETION**

System completion is dependent on the contractual relationship.

**Version 1:**

Where connection lines have been laid as contractually agreed by the system installer. OCHSNER customer service is responsible for:

- Connecting the previously laid refrigerant lines.
- Conducting leakage tests on the refrigerant lines.
- Evacuating the refrigerant lines.
- Insulating the refrigerant lines around the connection points on the indoor and outdoor units.
- Charging the system with the correct refrigerant according to OCHSNER guidelines.

**Version 2:**

Where connection lines have been laid and the technical installation of the refrigerant circuit carried out by OCHSNER Customer Service.

**WARNING: Burns**

Work on the refrigerant circuit may be carried out only by OCHSNER Customer Service or by customer service partners authorised by OCHSNER.

**COMMISSIONING THE SYSTEM**

All requirements must be met before commissioning.

Commissioning is carried out by OCHSNER customer service or by a customer service partner authorised by OCHSNER.

**Note:**

If the system is operated without technically correct commissioning in accordance with the OCHSNER guidelines, all warranty claims will be invalid.

**Note:**

Special work such as system venting, connecting electrical cables, additional training, etc., which is not included in OCHSNER's scope of delivery, will be invoiced separately.

- Functional testing of the heating circuit (system pressure, function of diaphragm expansion vessel, flow rate settings). Responsibility for the system remains with the system installer.
- Checking the flow rates.
- Checking that all shut-off valves are open.
- Checking the electrical connections to the system components including all required safety devices.
- Switching on the main power circuit (3-phase supply to heat pump).
- Switching on the power supply to the control circuit.
- Configuring the system using the commissioning assistant.
- Checking the sensor configuration.
- Conducting a relay test on the outputs.
- Making customer-specific settings on the heat pump system.
- Producing a commissioning report and completing the entries in the service book.
- Handing the system over to the system user or end customer.
- Explanation of the basic functions of the heat pump system (controller operation, etc.).

**Note:**

OCHSNER customer service will provide an explanation of the basic functions of the heat pump system (controller operation, etc.). If the system user is not present for commissioning, the system installer will assume responsibility for this explanation. Instruction on the functionality of the overall system is the responsibility of the system installer.

**Invoicing for commissioning (CX):**

- to be settled with the system partner
- If further work arises (servicing, additional installation work, etc.), this will be billed for at an hourly rate. Work carried out is invoiced.
- The charge for having the connection line laid by an OCHSNER technician is not included in the fixed commissioning fee nor in the connection line meter price. In this case, it will be billed at an hourly rate according to the actual time required by the customer service technician.
- For cascade systems, the fixed commissioning fees apply to each individual unit.
- If commissioning has to be interrupted due to non-compliance with the commissioning requirements, the invoice for this will also be calculated according to actual work carried out (a fixed cancellation fee will be charged as a minimum).

**The fixed commissioning fee includes:**

- Fixed fee for journey to site (customer service engineer journey time plus vehicle expenses)
- Refrigerant
- All components and parts required for standard commissioning that are not supplied in the scope of delivery
- Does not include laying of connection line, which is invoiced for according to actual work carried out
- Does not include incorporation into a building management system, which is invoiced for according to actual work carried out

**Activities carried out by OCHSNER:**

- Checking that the system has been installed according to the machine-specific engineering and installation information. In commissioning the system, OCHSNER offers no warranty regarding the ability to meet the heat demand of the building to be heated.



# GENERAL SALES AND DELIVERY TERMS AND CONDITIONS OF OCHSNER WÄRMEPUMPEN GMBH (FN 85708T)

For our business partners, distributors and trade partners. Version: May 2017

## 1. Definitions

- 1.1 "Customer" refers to our contractual partner in terms of business partner, distributor and trade partner, and therefore to businesses.
- 1.2 "Contract Goods" are services, goods and/or products of any kind ordered from us by the Customer.
- 1.3 "Job Order" is the contract validly created on the basis of our offer or the Customer's order and our order confirmation and/or fulfilment.
- 1.4 "End User" is our Customer's client or the system operator.
- 1.5 The supplied products have been designed and developed for domestic use. They are thus household appliances within the meaning of the Machinery Directive. Appliances for "domestic use" can also be used for commercial and industrial purposes if they are suitable for the intended purpose and the conditions prevailing at the deployment location and if the manufacturer's safety instructions are observed.

## 2. Scope

- 2.1 All legal transactions, deliveries, goods, services and offers made by us are subject to these Terms and Conditions of Sale and Delivery. The Customer expressly acknowledges that we hereby reject any and all conflicting provisions made in an order or in any other business papers of the Customer. A Customer's conflicting terms and conditions are not recognised by us and shall apply only if we have confirmed them in writing, even if we fail to give express notice of said objection in each instance. These Terms and Conditions of Sale and Delivery shall serve as a framework agreement for all future transactions with the Customer.
- 2.2 In the event that the terms in the various contract documents are contradictory, the following order of precedence shall apply:
  - the Job Order;
  - these General Terms and Conditions of Sale and Delivery;
  - Austrian or other quality standards as expressly agreed upon in writing between us and the Customer;
  - other statutory provisions.

## 3. Contract

- 3.1 Our offers and price lists are non-binding and are subject to change and solely constitute an invitation to treat. Customer orders are binding offers to enter into a contract with us. Customer orders are binding upon the Customer upon receipt by us; receipt by one of our staff members shall suffice.
- 3.2 Contracts shall become effective only upon our written confirmation or when we fulfil said order in a manner determined by us (e.g. delivery/dispatch of the Contract Goods). All other agreements or side agreements, including those made at a later date, shall become effective only upon our written confirmation. Our employees are not authorized to make legally binding declarations on our behalf if they have not been granted a special power of attorney for said purpose which has been communicated to the Customer.
- 3.3 Any technical information provided in our documents shall be deemed to constitute only approximate values unless expressly pledged as binding. We reserve the right to make construction and/or production-related modifications and deviations. Obvious spelling and arithmetic errors in quotations, order confirmations and invoices may be corrected by us at any time.

## 4. Prices

- 4.1 All prices quoted by us are subject to change and are quoted, except where expressly stated otherwise, in euros (EUR) without VAT. Unless otherwise agreed in writing, cost estimates are created without any guarantee for accuracy.
- 4.2 Any changes in labour costs due to collective bargaining or shop-level agreements or statutory regulations, as well as changes to other costs relevant to cost centres or contract fulfilment, including those for materials, energy, transportation, outside labour, financing, etc., entitle us to increase the prices accordingly. The Customer may not for this reason withdraw from the contract or claim that the basis of the transaction has lapsed (Wegfall der Geschäftsgrundlage). Unless otherwise agreed in writing, all prices are exclusive of additional expenses.
- 4.3 The offer prices shall apply only to orders of the entire offer. It is assumed that the goods or services can be provided in a single process. Additional costs arising from unforeseen disruptions of supplies or services will be billed separately. This also applies to delays in commissioning caused by incomplete site preparations.
- 4.4 Services ordered, but not included in our offer, will be performed in accordance with our terms and at our standard rates on the basis of time/costs incurred.

## 5. Delivery, Transfer of Risk

- 5.1 As a general rule, agreed delivery periods commence when we send an order confirmation. The delivery period in question does not, however, commence until we have received and confirmed all technical or other information, documents, advance payments or any other item required from the Customer in order for us to fulfil our obligations.
- 5.2 The delivery period shall be reasonably extended if, at the request of the Customer, changes to the design are necessary which require additional goods and services. Any resulting additional costs shall be borne by the Customer.
- 5.3 The delivery deadline is considered met if the Contract Goods leave our warehouse (or, for drop-ship sales, our supplier's warehouse) before the deadline has expired or if, by that time, we have notified the Customer that the Contract Goods are ready to be delivered. Downtimes of the transport vehicle or train car are charged to the Customer, unless caused by us through gross negligence or wilfully and knowingly.
- 5.4 We will strive to meet promised delivery dates, but they are not binding. Delayed shipments do not entitle the Customer to withdraw from the contract or to assert claims for warranty, avoidance on account of mistake or damages. We are entitled to make partial or advance deliveries and invoice them separately.
- 5.5 We ship our products ex works in accordance with the Incoterm EXW; i.e. as a rule, the transport must be organised by the Customer and the liability risk transfers to the Customer as soon as the goods are loaded into the transport vehicle in our shop. While we do offer our Customers transport services, any delivery is still considered ex works. We reserve the right to choose the transport method and route and we do not accept any liability whatsoever. In particular, there is no obligation to choose the cheapest mode of transport.
- 5.6 All deliveries – including partial and/or advance deliveries – are packaged in the customary manner. Costs for packaging, shipping, customs and other services are billed separately. We are entitled to charge a shipping and freight fee as listed in our transport costs pricelist as amended from time to time. Express and air cargo surcharges will also be invoiced separately. Transport insurance will only be purchased on behalf of and at the cost of the Customer. We are not obliged to insure goods for transport.
- 5.7 Operational disruptions and events caused by force majeure as well as other events beyond our control, particularly supply-chain delays and the like on the part of our upstream suppliers entitle us either to extend the deadlines accordingly or to withdraw from the unfulfilled part of the contract to the exclusion of any legal claims, particularly for warranty, avoidance on account of mistake and damages. This applies even if the events occur at a time when we were already in default.
- 5.8 Once we have notified the Customer that the goods are ready to be delivered, but no later than upon departure of the same from our warehouse or from the warehouse of our supplier in the case of direct supplies, the risk as to price and performance transfers to the Customer regardless of any separate pricing agreement for the delivery; this shall also apply if we have

agreed to make any subsequent deliveries. If the shipment of goods ready to be delivered or the agreed delivery is rendered impossible for reasons beyond our control, we reserve the right at our discretion to store the goods at the expense and risk of the Customer, such storage constituting delivery as defined herein; in this instance we are in particular entitled to undertake such storage ourselves at the customary market prices or to store the goods ready for dispatch with a third party on behalf and billable to the Customer. Regardless of any agreement as to the place of delivery and acceptance of any transport costs, the place of fulfilment is deemed to be the headquarters of our company.

- 5.9 The Customer must note any transport damage on the waybill. The burden of proof of damage not noted thereon lies with the Customer.

## 6. Payment Terms, Default, Offsets, Overseas Shipments

- 6.1 We are entitled to send our invoices electronically. The Customer hereby expressly agrees to this form of transmission. The invoice must be paid in advance, unless a different due date has been agreed in the Job Order. The invoice amount must be received no later than three days prior to the planned delivery ex works (EXW). Payments for services rendered are due immediately. Unless otherwise agreed in writing or required by statute, the retention of payments is not recognised and is deemed to constitute payment default. Bills of exchange or cheques will be accepted only by special agreement. We reserve the right to apply any incoming payments to any receivables at our discretion.
- 6.2 If the Customer defaults on payment, we are relieved of all further service and delivery obligations and entitled to withhold any outstanding deliveries or services or to demand advance payments or securities. In addition, the Customer shall be strictly liable to pay default interest at the rate of 1% per month; we are entitled to claim any additional bank interest in the customary amount. The Customer shall also pay reasonable reminder and collection costs. For each reminder issued by us, the Customer undertakes to pay a minimum of EUR 20.
- 6.3 If after the contract has been entered into, the Customer's financial assets suffer a significant deterioration or it becomes known that circumstances are likely to reduce the Customer's creditworthiness in our view, all receivables become immediately payable. All further deliveries will then be made only against advance payment.
- 6.4 The Customer is expressly forbidden from retaining or off-setting payments for counterclaims of any sort.
- 6.5 For export transactions, the Customer bears the sole responsibility for obtaining and maintaining the necessary export, customs and other approvals and the like at its own expense. We provide no warranty or guarantee whatsoever that the Contract Goods will be approved for export. Furthermore, the Customer shall return all export and customs documents and the like to us in the original, otherwise the Customer shall pay all applicable VAT.
- 6.6 For non-contractual interruptions in delivery not caused by us, we are entitled to prepare partial invoices.
7. **Resale, Customer Responsibilities**
- 7.1 We grant the Customer the right to sell the Contract Goods. The Customer is an independent business operating in its own name and at its own responsibility. The Customer buys and sells the Contract Goods exclusively in its own name and at its own cost and is not authorised to make legally binding agreements on our behalf unless separately authorised.
- 7.2 If this provision is breached by the Customer, the Customer is obligated to fully indemnify and hold us harmless with regard to any third party claims, regardless of their legal basis.
- 7.3 The Customer expressly acknowledges that it is solely responsible for planning, technical conception and dimensioning, obtaining any necessary permits as well as the assembly and installation of the Contract Goods provided by us and shall indemnify and hold us harmless with regard to all claims. The Customer is required to perform the installation and train the End User in the system according to statutory provisions and the state of the art in a proper and professional manner. In the event that the Customer does not provide the same within a reasonable period, we are entitled to provide it at the Customer's cost.
8. **Support Services to End Customers**
- 8.1 If we provide services directly to the End User, these are billable and shall be paid by the End User directly to us, provided there is no direct warranty claim against us.
9. **Retention of Title**
- 9.1 We shall retain title to all Contract Goods supplied by us in whole or in part until full payment of the purchase price plus interest and additional charges has been received, regardless of the legal basis. An order consisting of several partial deliveries shall be considered a single order, with the title to all goods delivered retained until payment of all receivables under this legal transaction is received in full. Unless we have exercised our right to withdraw from the contract – a right we may exercise unilaterally – the assertion of the right to retain title does not constitute a withdrawal from the contract and does not remove the Customer's obligations, especially to pay the amounts due.
- 9.2 The Customer is entitled to assign as part of its business dealings its inchoate rights to Contract Goods subject to our retained title but is not entitled to offer said goods as security or allow liens to be placed against the same. This right of the Customer can be revoked by us at any time.
- 9.3 The Customer must notify us of any third party pledge or other third party encumbrance on the property immediately. The Customer is obliged to pay the costs and take the measures required to eliminate such interference, in particular court and other legal costs.
- 9.4 The retention of title also extends to products resulting from processing. If our goods are processed or combined with other materials or with land, we acquire a proportional co-ownership interest in the resulting products and the added value. The Customer is obliged to inform its customers of this legal consequence.
- 9.5 For purposes of securing and fulfilling our claims, the Customer hereby assigns all claims arising from the sale of goods to which we hold an ownership interest – where applicable to the extent of our co-ownership interest. We accept this assignment. The Customer is obliged to notify us immediately of the name and address of its customers and the status and amount of the claims resulting from the resale. The Customer shall inform its respective customer of the assignment of the claims and provide evidence thereof. Furthermore, the Customer is required to record this assignment of claims to us in its business records in a suitable manner. We are entitled at any time to notify the Customer's End User of the assignment. Any assignment fees shall be borne by the Customer.
- 9.6 The Customer hereby transfers to us ownership in all amounts received from cash sales of goods to which we hold title up to the amount payable to us at the current time for deliveries of such goods; we hereby instruct the Customer to keep these amounts separately in trust for us.
- 9.7 If the Customer fails to fulfil his obligations or stops his payments, the entire balance shall become due immediately, even if there are any bills of exchange with later due dates. In this instance we are entitled to demand the immediate surrender of the Contract Goods to the exclusion of any right of retention. After repossession of the Contract Goods, we may at our discretion either sell the Contract Goods and credit the proceeds generated less 20% resale charges to the Customer's remaining obligations or take back the Contract Goods at the invoice price less any deductions for reduced value and invoice the Customer a customary rent for the period of time during which the supplied goods were in its possession.



## 10. Warranty, Incorrect Delivery, Product Liability

- 10.1 The Customer shall notify us in writing of any defects in the Contract Goods immediately, but no later than within 3 days from delivery and before any further working or processing of the product so as not to preclude any warranty claims and/or claims for damages and/or avoidance on the ground of mistake. Such notice shall include a detailed description of the defects. Such notice does not, however, entitle the Customer to retain any amounts invoiced or parts thereof. In case of visible transport damage, the Customer is obliged to inspect the goods before accepting them and report visible transport damage without delay.
- 10.2 For defects not obvious during visual inspection upon delivery, the warranty period is two years from delivery and will not be extended or put on hold by repair attempts; this also applies to partial deliveries. Notice of such defects shall be provided in writing within 3 days from discovery of the defect so as not to preclude any warranty claims and/or claims for damages and/or avoidance on the ground of mistake, but such defects do not entitle the Customer to retain any amounts invoiced or parts thereof. For end customers and End Users, manufacturer's warranties of 2 up to 7 years are granted for heat pumps in connection with service contracts. These are subject to separate warranty provisions and separate service contracts.
- 10.3 Deviations of the delivered Contract Goods from that which was ordered, such as incorrect dimensions or the wrong Contract Goods (incorrect delivery), must be reported within 3 days of delivery and before any resale and/or further working or processing is undertaken. Otherwise, the Contract Goods shall be deemed accepted and may not be returned or exchanged.
- 10.4 All advice provided by us, whether orally or in writing, is not binding and does not release the Customer from the obligation to inspect the Contract Goods to check for their suitability for the intended purpose. We do not warrant that products in subsequent deliveries will be an exact match for those in the first delivery. Only Ochsner or an authorised service provider instructed by Ochsner in writing may put an Ochsner machine into service. The commissioning itself is limited to the components delivered by Ochsner and does not apply to the entire heating system or system components not supplied by Ochsner. No liability is assumed for the complete heating system or third party system components after there have been put into service.
- 10.5 The technical requirements for system design and installation for products supplied by us as found in manuals, operating instructions and the like are only current minimal requirements and make no claim to completeness. The Customer is obliged to comply with the relevant state of the art and current OCHSNER guidelines, otherwise all warranty claims and any express warranties provided by us will expire. In particular, we assume no warranty or liability for calculations made by the Customer on the efficiency of a Contract Good provided by us or the suitability of the same for the Customer's intended purposes, unless agreed separately in writing.
- 10.6 Also excluded is any warranty for disposable parts, such as filters, filter elements, anodes and electrical parts, circulation pumps, electric immersion heaters, valves and plate heat exchangers (for example, due to scaling, corrosion, dry run, unsuitable water quality) or parts installed on site. In cases of doubt, compliance with water quality regulations per VDI 2035 must be demonstrated by the Customer. In the case of storage tanks, the anti-corrosion anode must be shown to have been maintained. In addition, we point out that flying rust particles can occur on all parts exposed to the atmosphere.
- 10.7 The Customer shall always provide proof of defects in the Contract Goods at the time of transfer; the legal presumption of Section 924 of the Austrian Civil Code is explicitly excluded.
- 10.8 For Contract Goods received by us from our supply chain, we assume liability only within the scope of our existing warranty claims against our supplier.
- 10.9 We only warrant that items provided by us have the characteristics customarily expected for such goods. For any other characteristics, in particular those made in public statements such as advertising and in information supplied with the Contract Goods, we assume liability only if we have expressly warranted such characteristics in writing at the time the order was accepted.
- 10.10 Notwithstanding other provisions in these General Terms and Conditions of Sale and Delivery, liability under the warranty expires
- i) when the Customer or third parties make changes or repairs to the Contract Goods without our written consent,
  - ii) when non-original accessories are used,
  - iii) when the Contract Goods are not used as intended,
  - iv) when installation and operating instructions are not followed,
  - v) when the system datasheet has not been completed,
  - vi) if the system is put into service by anyone other than Ochsner's customer service or a service contractor authorised in writing,
  - vii) in the case of defective auxiliary equipment such as insufficient flow rates or system bridges, lack of flow switch in heat source system and or heat sink system, the lack of e-bar with heat source air, external control, interference with the control unit, pollution during construction, poor water quality, lack of hydraulic isolation, improper valves,
  - viii) in the case of incorrect sizing and/or faulty construction of the heat source system,
  - ix) when evaporators are not connected in accordance with the installation and connection guidelines.
- 10.11 We only warrant the functionality of our products but not their appearance. Any such warranty obligation shall apply exclusively to defective equipment parts, but not to the labour and travel costs required to correct the same.
- 10.12 We assume no liability for operating costs and noise emissions at the installation site as they depend on the system configuration, buildings, weather, user behaviour and control settings.
- 10.13 Unless otherwise separately agreed, the place of fulfilment for all services to be provided by us under warranty shall be the headquarters of our company.
- 10.14 We reserve the right to fulfil warranty obligations by exchange, repairs, price reductions or rescission (Wandlung) per our discretion.
- 10.15 The assignment of warranty and damage claims or the like is not permitted. The right of recourse pursuant to Section 933b of the Austrian Civil Code is excluded.
- 10.16 For damage caused to our Customer in the course of the business transaction, we assume a maximum liability equal to the value of the order in which the damage occurred and only in cases of gross negligence by us or one of our agents (Erfüllungsgehilfen), except for

personal injuries, for which we assume liability in cases of slight negligence. Compensation for consequential damage, purely financial losses, profit lost and loss from claims of third parties is excluded.

- 10.17 Instructions found in instruction manuals or other product information must be strictly observed by the Customer to prevent any damage. We explicitly caution against a use of the product beyond its defined areas of application.
- 10.18 If our Customer is required by the Austrian Product Liability Act to assume liability, the Customer expressly waives recourse to us as set forth in Section 12 of the Austrian Product Liability Act.
- 10.19 If the Customer puts the goods supplied by us into circulation outside the European Economic Area, the Customer undertakes to exclude the right to compensation under the Austrian Product Liability Act vis-à-vis its purchaser, if such exclusion is possible according to the applicable statutes agreed between the Customer and its purchaser. In this case or if the Customer fails to make this exclusion, the Customer is obliged to indemnify and hold us harmless regarding third party product liability claims. The Customer undertakes to acquire adequate product liability insurance and shall submit a copy of the policy to us on request.
- 10.20 The return of Contract Goods is possible only under a return form issued by us. Returns made without the return form will not be accepted by us and returned on a freight collect basis.
- 10.21 The return of Contract Goods including accessories or spare parts delivered in compliance with the job order is excluded.

## 11. Contractual Amendments, Withdrawal

- 11.1 If unforeseen events significantly affect the commercial significance or the content of the contracted goods or services or have a significant impact on our operations or if it becomes clear after the contract takes effect that it cannot be fulfilled, the contract shall be reasonably amended. If this is not economically viable, we reserve the right to withdraw from the contract in whole or in part. If we want to exercise this right, we shall inform the Customer immediately after we become aware of the significance of the event, even if an extension of the delivery period was initially agreed with the Customer.
- 11.2 If there is a default of acceptance or for other important reasons, such as payment default on the part of the Customer, we are entitled without prejudice to any other claims to withdraw from the contract immediately after setting a 14-day grace period. The withdrawal becomes effective upon our unilateral declaration.

## 12. Privacy and Copyright

- 12.1 The Customer consents to any personal data contained in the contract being stored and processed by us in fulfilment of this contract with the help of automated data processing systems.
- 12.2 All documents surrendered to the Customer, especially cost estimates, plans, drawings and other technical documents, as well as samples, catalogues, brochures, illustrations and the like remain our intellectual property at all times; the Customer does not obtain or acquire any rights whatsoever to them, including e.g. use or exploitation rights. The Customer is not entitled to make these documents available to third parties. These documents shall be returned immediately to us upon request.
- 12.3 The Customer agrees that we may use illustrations of the Contract Goods that has purchased for advertising purposes and present it in other ways, e.g. as a model; the design and mode of the presentation is left to our discretion.
- 12.4 For custom productions, the Customer warrants that the creation of the Contract Goods in accordance with the Contract or other services do not infringe third party proprietary rights. The Customer shall hold us harmless and indemnify us completely against any third party claims in this respect.

## 13. Concluding Provisions

- 13.1 The Customer is obliged to immediately notify us of any changes to its company name, business address, tax identification number and the like without further request by us until such time as the transactions under this contract have been completely fulfilled by both sides. If this notice is not given, then notices sent to the Customer shall be deemed received if they have been sent to the last known address. The Customer shall be obligated to prove on a case-by-case basis that its notice of change was received.
- 13.2 The contract language is German.
- 13.3 The place of performance for all contractual obligations of the parties is the location of our headquarters in Linz, Austria, regardless of any agreement regarding the place of delivery and the assumption of any transport costs or the place of payment.
- 13.4 All transactions, and in particular those covered by these General Terms and Conditions of Sale and Delivery, are only subject to Austrian substantive law, excluding its conflict of laws provisions especially those under private international law insofar as these refer to the application of foreign law. If, in cases with a cross-border element, Austrian law provides for the application of special, international substantive laws that are also applicable in Austria – such as the United Nations Convention on Contracts for the International Sale of Goods – these do not apply and are explicitly excluded. This also applies to questions regarding the conclusion and interpretation of these Terms and Conditions and the contract.
- 13.5 The exclusive place of jurisdiction for our Customer for all disputes arising under or in any connection with this contract is the court with subject-matter jurisdiction in Linz, Austria. We reserve the right, however, to file suit against the Customer at our discretion in any other court which may have jurisdiction under national or international law.
- 13.6 If any provision of our General Terms and Conditions of Sale and Delivery is or becomes invalid, the validity of the remaining provisions shall not be affected. The parties undertake to replace the invalid provision without delay with another provision which most closely reflects the commercial purpose of the invalid provision. The same is true for any gaps.
- 13.7 The headings contained in these General Terms and Conditions of Sale and Delivery are for convenience only and must not be used as a guide to their interpretation.
- 13.8 No business development between us and the Customer and no delay or omission in exercising a right, redress or remedy granted herein shall be deemed a waiver of such rights. Every right, redress and remedy granted to us herein is cumulative and of equal rank besides and in addition to any other rights, redress or remedy granted by law.

W775 ALB 05/2017

# ORDERING PROCESS AND ORDER CHANGES

## ORDER PROCESSING

To enable us to process your order quickly, please send the following to **auftragsbearbeitung@ochsner.com**:

- Precise invoice address (incl. customer number)
- Delivery address, even if delivery should go to the invoice address
- If available: picking department/end customer including address
- Contact data of every person coordinating the delivery - as dispatch advice messages from the shipping company will, in future, increasingly be sent by text or email, a mobile number and email address must be provided
- Part numbers
- Required delivery week
- Completed system datasheet for all heating heat pumps with OTE control or OTS standard schematic for all appliances with OTS control.

For spare parts orders, we would also require the serial number of the relevant machine and a detailed description or photos to be provided.

The delivery dates specified on the order confirmation apply ex works and are binding according to the applicable general terms and conditions. Changes to the delivery date or address are possible via email to **auftragsbearbeitung@ochsner.com** up to 2 weeks prior to delivery. Otherwise, we reserve the right to invoice for cancellation fees, multiple trips and any interim storage required.

Our production planning is based on the confirmed delivery dates. If a message about delivery date changes is not received in good time, considerable resources are tied up at the expense of urgently required systems and our usual short-notice delivery dates cannot be met. Let us work together for an even better coordinated delivery chain, to further raise customer satisfaction levels and avoid delayed deliveries.

## FEES FOR ORDER CHANGES

OCHSNER heat pumps are manufactured largely to order. Subsequent cancellations or unannounced delivery date changes incur costs and therefore can only be accepted under the conditions below. In these cases, a message must always be sent to **auftragsbearbeitung@ochsner.com**.

We reserve the right to charge the following fees:

### CANCELLATIONS

**Cancellation of order for heating/DHW heat pumps, accessories, connection lines or spare parts (with the exception of custom products):**

	Price €
With replacement order for comparable order value: no cancellation fee	0,-
Without replacement order up to 6 weeks prior to confirmed delivery	12% of the order value
Min. cancellation fee:	30,-
Beyond this, cancellation is not possible.	

**Return of already delivered goods (only with original packaging and accessories - with the exception of custom products):**

	Price €
Up to 6 weeks after delivery	12% of the order value
Min. cancellation fee:	30,-
Beyond this, cancellation is not possible.	

### SCHEDULED DELIVERY DATE CHANGES

Changes to the scheduled delivery date for orders must be communicated to **auftragsbearbeitung@ochsner.com** in good time, at least 2 weeks prior to the confirmed delivery date.

**Non-acceptance of deliveries due to delivery date changes:**

For non-acceptance without reason of deliveries according to the confirmed delivery week in the order confirmation, we reserve the right to charge a fixed fee for expenses incurred.

	Price €
Fixed fee for non-acceptance of deliveries:	300,-

# CORRECT GOODS RECEIPT

The following information does not constitute OCHSNER standards, but is practised law in transportation. When receiving goods, in the presence of the deliverer, check the packages to ensure they are complete and check the goods and packaging for external damage. Carry out the check carefully.

## IF DAMAGE IS IDENTIFIED, FOLLOW THE STEPS BELOW:



Document the damage to packaging or goods as accurately as possible with photos.



If in doubt, completely unpack the goods to precisely ascertain the extent of the damage.



Make a note of any defects in the packaging and goods on the handover confirmation (or digitally on the handheld device) and describe the damage as accurately as possible. Examples: wet packaging, ripped winding film, bent sheet metal, dented cardboard, the content must be checked, etc. The note “conditional acceptance” only has legal effect if an additional note is provided with it, explaining why conditional acceptance is applicable here.



Ask the driver to countersign your notes on the handover confirmation. **Copy or take a photo of the delivery papers if you do not receive a copy.**



Even if the driver is urging you to sign, make sure you carry out these steps properly and do not allow yourself to be rushed. If need be, refuse acceptance.



Make a note of the driver's name and ID.



Concealed (internal) defects must be reported within 7 days to OCHSNER, to enable the matter to be investigated. **Example: in the heat pump, a bracket has not withstood transportation and has become detached.** If, for example, there is no defect in the winding film, but the sheet metal beneath it is damaged, this is an external defect. The goods should have been checked on delivery and the damage noted.



In the event of a complaint after delivery, as the claimant, you must prove that the damage occurred during transportation. We therefore recommend carrying out a thorough goods receipt inspection. Remove sufficient packaging to enable you to assess any damage.

**The driver will not subsequently assume any responsibility, and the shipping company or OCHSNER cannot do so after the event. As soon as the driver is back in the vehicle, the goods are deemed to have been accepted without objection. If this is not the case, you must not confirm delivery without clear information. It is your responsibility.**

**Please inform your employees, business partners and all other persons who accept deliveries on your behalf; the recipient is liable for you!**

# TRANSPORT AND COMPLAINTS

## TRANSPORT COSTS <sup>1)</sup>

<b>EXPORT</b>		<b>Price €</b>
For net order value over:	<b>4.500,-</b>	<b>Free of charge</b>
For net order value below:	<b>4.500,-</b>	
Fixed transport fee:		<b>229,-</b>
Fixed transport fee reduced:		<b>129,-</b>

<b>PARCEL DELIVERY FOR SMALL GOODS AND SPARE PARTS <sup>2)</sup></b>		<b>Price €</b>
Standard up to 10 kg		<b>19,-</b>
Express		<b>39,-</b>

### Incoterms/delivery terms and conditions according to ALB 5.

We ship our products ex works in accordance with the Incoterm EXW; i.e. as a rule, the transport must be organised by the Customer and the liability risk transfers to the Customer as soon as the goods are loaded into the transport vehicle in our shop.

While we do offer our Customers transport services, any delivery is still considered ex works. We reserve the right to choose the transport method and route and we do not accept any liability whatsoever. In particular, there is no obligation to choose the cheapest mode of transport.



<sup>1)</sup> Prices net, excl. VAT

<sup>2)</sup> Ochsner organises a transport tariff for delivery on a scheduled date, but does not provide any warranty or compensation for damage arising from any delivery delays that cannot be influenced (e.g. due to an increased volume of traffic, construction site delays).

## COMPLAINTS

In the operating manual for your heat pump, you will find technical troubleshooting tips.

Is your part faulty or damaged? So that we can help you quickly, please contact our complaints processing department.

For a complaint, the following information must be sent to **complaint@ochsner.com**:

- Order confirmation number
- Your customer number
- Serial number of the appliance
- Part number of the product under complaint
- Brief description of the complaint
- Photos or videos of the damage

You are welcome to use our standardised record sheet. For a service visit by our technicians, please book an appointment on **www.my-OCHSNER.com**.

### Within the context of the guarantee, we will be happy to check the following options for you:

- Repair or remedying of fault
- Return or replacement
- Spare parts delivery

Aside from the guarantee, we will also check the option of a repair (costs may be incurred). In the event of no fault in the part under complaint, we would like to point out that we will charge you for costs incurred. Note that cancellation fees will be incurred in the event of cancellations.

## GENERAL TERMS AND CONDITIONS OF DELIVERY

All orders and deliveries of OCHSNER heat pumps, including OCHSNER accessories and services provided by OCHSNER customer service, are subject to our current valid general terms and conditions of delivery. See page 148

# DESIGN CONSULTING AND SUBSIDIES

## DESIGN CONSULTING

Design is the responsibility of the system designer or system installer. In the event that special system solutions require designs that are not contained in existing OCHSNER schematic diagrams (see Partner-net, [www.partner.ochsner.com](http://www.partner.ochsner.com)), we can offer design consulting.

This consulting requires the installer or system designer to lay out a specific definition of tasks. It must include a drawing of the planned system, including the most important components and a functional description. OCHSNER will then carry out a feasibility study of these specifications and discuss any possible alternatives.

Based on this process, a scope of service for design consulting will be defined. Once an order has been placed in writing, a schematic diagram will be drawn up (subject to a fee). This schematic diagram represents design consulting only and is not intended to replace a detailed, expert design/engineering process in any way.

## FUNDING GUIDELINES

Information about regional requirements and guidelines can be obtained from your local sales partner or from the website of your local heat pump association.

DESIGN CONSULTING	Price €
<b>Fixed fee 1</b> <ul style="list-style-type: none"><li>- Minor adaptations to the standard schematic</li><li>- Personalisation of the schematic</li><li>- Gathering the required additional materials in digital form (operating manuals, work instructions, etc.)</li><li>- Personal advice by phone</li></ul>	<b>525,-</b>
<b>Fixed fee 2</b> <ul style="list-style-type: none"><li>- Developing systems and concepts</li><li>- Preparing parameters</li><li>- Coordination with customer service regarding system and commissioning</li><li>- System sizing down to buffer tank</li><li>- Gathering the required additional materials in digital form (operating manuals, work instructions, etc.)</li><li>- Personal advice by phone</li></ul>	<b>1.050,-</b>
<b>Fixed fee 3</b> <ul style="list-style-type: none"><li>- Developing comprehensive/complex systems and concepts</li><li>- Preparing parameters</li><li>- Coordination with customer service regarding system and commissioning</li><li>- System sizing down to buffer tank</li><li>- Gathering the required additional materials in digital form (operating manuals, work instructions, etc.)</li><li>- Personal advice by phone</li></ul>	<b>2.100,-</b>

# CONTACT US!



## OUR OCHSNER HOTLINE















**EXPORT** **+43 504245 – 7**

## OUR DEPARTMENTS AND THEIR RESPONSIBILITIES

	We deal with	Tel. no.	Email
<b>SALES</b>	<ul style="list-style-type: none"> <li>- Offers and preparation of offers</li> <li>- Queries about the pricelist (principles)</li> <li>- Queries about the quotation program</li> <li>- Queries about country-specific subsidies</li> <li>- Preparation of documents for a heat pump</li> <li>- Organisation of product training courses</li> </ul>	<b>EXP</b> <b>+43 5 04245 – 347</b>	<b>vertrieb@ochsner.com</b>
<b>ORDER PROCESSING</b>	<ul style="list-style-type: none"> <li>- Order queries</li> <li>- Transport queries</li> <li>- Queries about spare parts and accessories</li> <li>- Ordering spare parts and accessories</li> <li>- Invoicing queries</li> <li>- Queries about replacement deliveries</li> </ul>	<b>EXP</b> <b>+43 5 04245 – 341</b>	<b>auftragsbearbeitung@ochsner.com</b>
<b>DESIGN CONSULTING</b>	<ul style="list-style-type: none"> <li>- Design consulting for installers and system designers</li> <li>- Design consulting in the event of a system replacement</li> <li>- Detailed technical queries about heat pumps</li> <li>- Detailed technical queries about documents</li> </ul>	<b>EXP</b> <b>+43 5 04245 – 346</b>	<b>planung@ochsner.com</b>
<b>CUSTOMER SERVICE</b>	<ul style="list-style-type: none"> <li>- Queries about existing systems</li> <li>- Booking customer service appointments</li> <li>- Booking commissioning appointments</li> <li>- Queries about commissioning (process, documentation)</li> <li>- Queries about maintenance contract/maintenance appointment</li> <li>- Queries about the OTE touchscreen</li> </ul>	<b>EXP</b>	<b>customerservice@ochsner.com</b>
		<b>FR</b>	<b>s.a.v@ochsner.com</b>

# NAVIGATION AID

## MEANING OF SYMBOLS

	Air as a heat source		Ground as a heat source – brine		Geothermal probes as a heat source
	Ground as a heat source – direct extraction		Water as a heat source		Heating version
	Heating and cooling version		Flow temperature 65°C		Flow temperature 60°C
	Flow temperature 55°C		Smart grid ready as standard		DHW heating
	LAN connection Bus communication		ErP ready as standard Since 26 September 2015, EU energy efficiency marking is compulsory for boilers and DHW tanks with heat pump. As OCHSNER system partner, you do not have to worry about producing the product or system label. Because with the OCHSNER quotation programme, all labels are created automatically if you use OCHSNER system components.		

## DELIVERY CLASSES

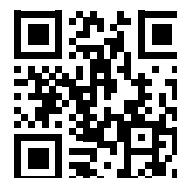
**I = in stock**

**II = max. 4 weeks, manufactured to order**

**III = max. 4-8 weeks, manufactured to order**

**IV = Please enquire for delivery time; more than 8 weeks, manufactured to order**

Further technical details under  
[www.ochsner.com](http://www.ochsner.com)





Partner of



[wwf.at/ClimateGroup](http://wwf.at/ClimateGroup)

# OCHSNER

## HEAT PUMPS

**OCHSNER Wärmepumpen GmbH Austria (Commercial register)**

A-4020 Linz, Krackowizerstraße 4, [kontakt@ochsner.at](mailto:kontakt@ochsner.at)

**Head Office/Factory**

A-3350 Haag, Ochsner-Straße 1

OCHSNER hotline: +43 5 04245 - 8, [kontakt@ochsner.at](mailto:kontakt@ochsner.at)

**OCHSNER Wärmepumpen GmbH Germany**

D-10719 Berlin, Kurfürstendamm 11

OCHSNER hotline: +49 69 256694 - 8, [kontakt@ochsner.de](mailto:kontakt@ochsner.de)

**OCHSNER Wärmepumpen GmbH Switzerland**

CH-8001 Zurich, Uraniastrasse 18

OCHSNER hotline: +41 58 32041 - 01, [kontakt@ochsner.com](mailto:kontakt@ochsner.com)

**OCHSNER East**

PL 31-302 Kraków, ul. Pod Fortem Nr. 19

OCHSNER hotline: +43 504245 - 7, [kontakt@ochsner.pl](mailto:kontakt@ochsner.pl)

Visit us at [www.ochsner.com](http://www.ochsner.com)

and [www.facebook.com/ochsnerwaermepumpen](https://www.facebook.com/ochsnerwaermepumpen)

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