
OCHSNER heat pumps
PRICELIST
EXP | 2020
OCHSNER
HEAT PUMPS

Gedruckt nach der Richtlinie des
Österreichischen Umweltzeichens
„Druckerzeugnisse“, oha-druck GmbH, UW 1087

Pricelist is valid for resellers from 1 January 2020.
The publication of this pricelist invalidates all previous pricelists.
All prices in €, excl. VAT.

All images in the pricelist are for illustration only and may differ from the actual product.
The right to make technical modifications is reserved. Layout and printing errors excepted.

CONTENTS

THE CLIMATE EMERGENCY AND WHAT WE MUST DO ABOUT IT

The global rise in temperatures has a severe impact on both people and the environment – words must finally be followed by action.

In the international agreement adopted in Paris in 2015, the signatory states agree to limit the rise in the average global temperature to "well below 2°C".

Limiting the temperature rise to below 2°C means saving the planet from reaching critical tipping points, such as the melting of the Greenland ice caps. In order to limit global warming and mitigate its effects, it is essential to pursue the "highest possible ambition" to reduce greenhouse gas emissions. This means that we need more international and national effort and finally concrete action to protect our climate and our environment!

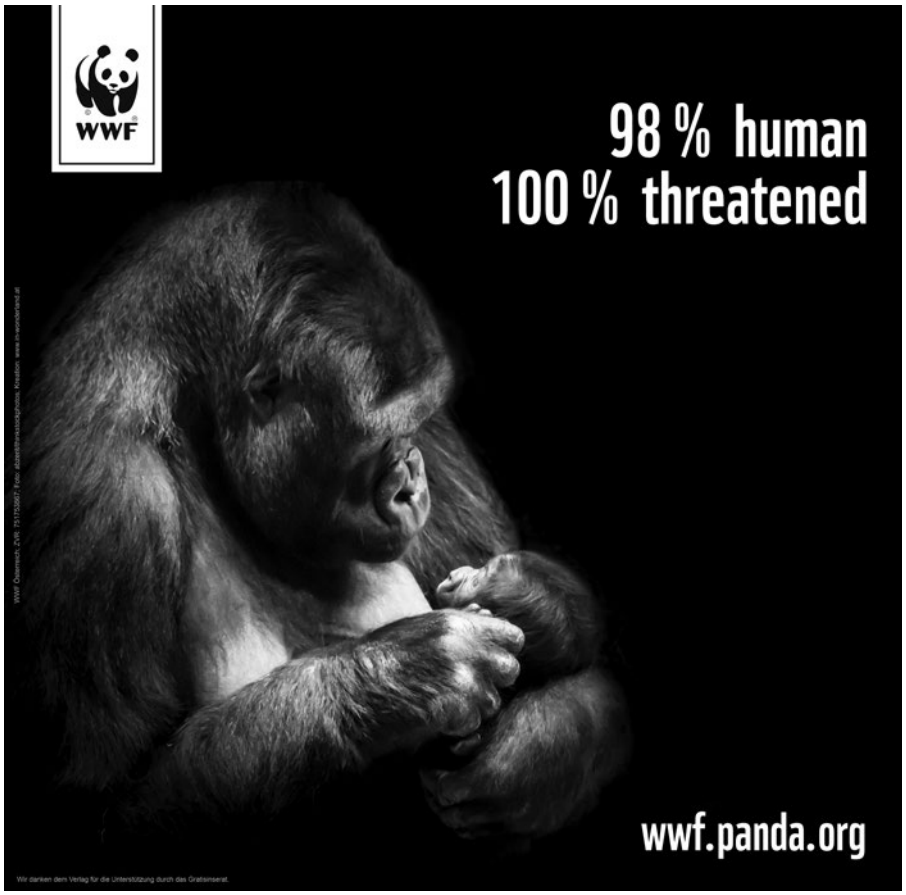
The WWF is therefore calling for a package of measures from politicians to make European climate neutrality a reality by 2040. From the environmental protection organisation's point of view, this means quickly implementing effective regulations, as a sign of appreciation for our nature. After all, intact ecosystems are the best insurance we have against the climate crisis and as a basis for a successful future for future generations.

WHAT EXACTLY DOES CLIMATE NEUTRALITY MEAN FOR AUSTRIA?

Climate neutrality is defined as the balance between the emission and absorption of greenhouse gases (GHG). The absorption of GHG emissions is achieved through CO_2 sinks, such as forests. Forest management must therefore urgently be supplemented by "sink management". But creating CO_2 sinks through planting and expanding forests alone is by no means sufficient: Above all, CO_2 emissions must be rapidly reduced and energy efficiency increased to slow down global warming in the long term.

ACCEPTING CHALLENGES AND TAKING ADVANTAGE OF OPPORTUNITIES

Companies and organisations that anticipate the needs and trends arising from the climate crisis will not only increase the survivability of our biodiversity, but also the economic sustainability of their own companies, thus contributing to the preservation and creation of jobs.



ACHIEVE MORE TOGETHER

The WWF invites companies to become part of the WWF CLIMATE GROUP. Together, this top-class company network is committed to an intact nature and a liveable future. Through climate-conscious action, we can turn the climate crisis into an opportunity for our society's development. Current partners include Allianz Versicherung, BKS Bank, gugler, IKEA, Mondi, OCHSNER Wärmepumpen, Spar and VBV Vorsorgekassa.

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

DEAR SYSTEM PARTNERS,

our current pricelist is available in time for the start of the 2020 financial year. I am delighted that we are once again able to present you with many innovations that underpin our technological leadership in heat pumps and open up additional business areas for you.

2019 saw the launch of OCHSNER AIR HAWK and the associated OTS (OCHSNER TRONIC SMART) controller, marking the start of tomorrow's generation of high-end heat pumps. To our delight, tests by the external heat pump test centre in Buchs have confirmed it as being the quietest and most efficient air/water heat pump available (GWP below 700). To optimise overall system costs, the new SP 220 DHW tank is available as an option to the new OCHSNER AIR HAWK.

The successor generation of our OCHSNER AIR BASIC series will also be launched in 2020. The OCHSNER AIR FALCON with OTS controller and low GWP safety refrigerant R32 are setting new standards in the starter segment, and our joint customers will be especially impressed by the space saving and quiet indoor unit (M1 casing).

By optimising the supply chain, we were able to cut the price of our already high-selling OCHSNER MULTI TOWER – the space saving indoor solution for AIR BASIC and AIR EAGLE.

From 2020, the new M2/M4 casing will also be used for water/water heat pumps, bringing the benefits of its 5-point anti-vibration system and already integrated heat sink system components also to this segment: space savings, reduced installation costs and even greater reliability.

For our AIR, TERRA and AQUA units, we have furthermore defined new attractive cascade packages. For TERRA and AQUA heat pumps in M2/M4 casings, you will now find passive cooling sets in the new pricelist.

For a clearer overview, we have dedicated separate sections to the planning information for all heat pump types and to our quality accessories.

After the record year of 2019, I am looking forward to continuing our successful partnership in 2020.

Karl Ochsner

THE FUTURE

Our common goal has to be the economical handling of finite resources and the reduction of emissions. OCHSNER has the vision of being able to contribute to the future of our national and global energy situation through the use of environmental energy.

COMPREHENSIVE RANGE OF PRODUCTS – FOR HEATING, COOLING AND DHW HEATING

OCHSNER offers a comprehensive range of products for ratings from 2 to 2,500 kW utilising the air, ground or water as a heat source. On request, OCHSNER heat pumps are available with cooling as an additional function. As required, DHW heating can be provided in conjunction with the heating heat pump or by means of the Europa hot water heat pump.

MUCH MORE THAN JUST A HEATING SYSTEM

Apart from the standard functions, such as central heating and DHW heating, OCHSNER also enables houses to be cooled, swimming pools to be heated, a link-up between the heat pump and a PV system, connection to the internet, link-up to building management systems, bivalent operation in conjunction with other heat generators, and much more.

FOR NEW BUILD AND RENOVATION PROJECTS

OCHSNER heat pumps are suitable for new build as well as renovation projects. Regardless of whether your building has panel heating or radiators.

NEW GENERATION

Reduced space requirements, faster installation and the resulting lower overall system costs, further reductions in sound emissions, state of the art design and superior tactile quality are the key features of the new generation. Here too, the focus is maximum efficiency, operational reliability and durability.

CONFIRMED EFFICIENCY AND PROVEN QUALITY

For many years, OCHSNER heat pumps in the OCHSNER AIR series have been achieving record-breaking levels of efficiency and outstandingly low noise levels, whilst ensuring the lowest possible heating costs. In geothermal energy, too, OCHSNER is a leader in energy efficiency. When choosing a heat pump, look for the EHPA European Quality Label.

OCHSNER IS ERP READY

OCHSNER shares the premium efficiency of its products with its customers. Even with air as the heat source, OCHSNER heat pumps achieve top ratings of A++ and higher, while condensing technology only achieves class B. Classification also comes into consideration when selecting tanks.

CERTIFICATIONS

Naturally, OCHSNER is certified according to the latest ISO standards.

TREND SETTING LEADING EDGE TECHNOLOGY

SMART PRODUCTION - MADE IN AUSTRIA AND GERMANY
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. OCHSNER also makes an important contribution through its intensive research & development work to ever more efficient and resource saving products.

STRENGTH FROM TRADITION - 148 YEARS OF OCHSNER
The OCHSNER family business goes way back to 1872. OCHSNER Wärmepumpen GmbH was founded 1978 and the company has become synonymous with energy awareness, a pioneering spirit and a flair for innovation. OCHSNER was one of the first European manufacturers to produce heat pumps on an industrial scale. Today, the company is recognised as one of the sector's international technology leaders. Since 1992, OCHSNER has concentrated solely on the development and manufacture of heat pumps.

OCHSNER SMART HOME
OCHSNER can be integrated at any time into Smart Home systems via building management systems. Not only that – if you wish, you can control your heat pump via PC, tablet or smartphone from home or anywhere else in the world!

OCHSNER AIR HAWK AND OCHSNER OTS
The OCHSNER AIR HAWK is the most technically advanced product from OCHSNER and, together with the OCHSNER TRONIC SMART controller, sets new standards in the heating industry.

FOR ME AND NATURE

2.5 MILLION TONNES CO_2 SAVED
Thanks to our OCHSNER heat pumps, customers have been able to reduce CO_2 emissions by nearly 2.5 million tonnes since 1978!

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.

OCHSNER AND THE WWF
As members 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.

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

UNIT TYPE		EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL
Order no.		110280	110295	110220	110225
PRICE €		**3.569,-**	**2.939,-**	**2.687,-**	**2.225,-**
Performance figures (EN 16147)					
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	l	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 CLASS					
Average climate zone (F to A+)		A+	A+	A+	A+
Load profile		XL	XL	L	L
DHW heating efficiency, ETAwh	%	155	138	115	115

- **COMPACT UNIT INCL. TANK**
- **DELIVERY CLASS I**

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
Modbus communication (building management, Smart Home systems)	+	-	-	-
Infinitely variable air flow rate controller	+	+	-	-

OPTIONALLY AVAILABLE	EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL	Order no.	Price €
Transport aid for EUROPA	+	+	+	+	936132	**704,-**

APPLIANCE DATA		EUROPA 333 GENIUS	EUROPA 300 L	EUROPA 250 DK	EUROPA 250 DKL
Dimensions (height x diameter)	mm	1850x650	1850x650	1625x657	1625x657
Weight	kg	165	165	145	141
Controller type		Tiptronic plus S (Touch-Display)	Tiptronic plus S (Touch-Display)	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		C13A	C13A	C16A	C16A
Max. operating current	A	10,2	10,2	4,0	4,0
Refrigerant		R134a	R134a	R134a	R134a
Condenser type (WNA)		Rollbond	Rollbond	Rollbond	Rollbond
Material		Aluminium	Aluminium	Aluminium	Aluminium
Compressor type		Rotary piston	Rotary piston	Rotary piston	Rotary piston
Sound power level	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
Smart grid ready		yes	yes	no	no
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
Defrost technology / Frost protection shutdown		yes / yes	no / yes	no / yes	no / yes
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		yes	no	yes	no
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:
- Weight specification for the appliance: Empty DHW tank and excl. appliance packaging
- Please observe the machine-specific engineering and installation information (see section Engineering, page 125).

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 €		**2.519,-**	**2.151,-**
Performance figures (EN 16147)			
Air inlet temperature		A15	A15
Load profile		XL	XL
Coefficient of performance (COP)		3,16	2,71
Heat-up time		8h 18min	6h 54min
Max. usable amount of water	l	373	288
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 CLASS			
Average climate zone (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

INCLUDED AS STANDARD	EUROPA MINI IWP	EUROPA MINI IWPL
Wall bracket (525 mm height x 700 mm projection)	2 pce	2 pce
Infinitely variable air flow rate controller	+	-

APPLIANCE DATA		EUROPA MINI IWP	EUROPA MINI IWPL
Dimensions (height x diameter)	mm	426x650	426x650
Weight	kg	45	45
Controller type		Tiptronic plus (Touch-Display)	Tiptronic light
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	1/220-240/50
Fuse protection		C16A	C16A
Max. operating current	A	4,0	4,0
Refrigerant		R134a	R134a
Condenser type (WNA)		Plate heat exchanger	Plate heat exchanger
Material		Stainless steel 1.4301	Stainless steel 1.4301
Compressor type		Rotary piston	Rotary piston
Sound power level	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
Smart grid ready		yes	no
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
Defrost technology / Frost protection shutdown		yes / yes	no / yes
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	**3.730,-**
EUROPA Mini IWPL package price 300 l	180013	**3.363,-**

PACKAGE: EUROPA MINI WITH 500L TANK	Order no.	Price €
EUROPA Mini IWP package price 500l	180016	**4.155,-**
EUROPA Mini IWPL package price 500l	180017	**3.789,-**

TWIN PACKAGE: EUROPA MINI (2 PCE.) WITH 750 L TANK	Order no.	Price €
EUROPA Mini IWP TWIN package 750 l	180020	**7.565,-**
EUROPA Mini IWPL TWIN package 750 l	180021	**6.834,-**

Notes:
- The performance figures (EN 16147) have been determined in combination with the SP 300 tank.
- Weight specification for the appliance: Split appliance excl. appliance packaging
- For details about DHW tanks, see page 108.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 125).

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.

NEW PRODUCTS

AIR HAWK 208

HIGH-FLYER FOR ENERGY EFFICIENT NEWBUILDS

The new OCHSNER AIR HAWK 208 heat pump is the tailored solution for detached houses with superior energy efficiency. Through the proven OCHSNER horizontal split evaporator system, the AIR HAWK 208 is exceptionally quiet in operation: in standard mode, the sound pressure level at a distance of 3 m from the outdoor unit is only 28 dB(A).

- Inverter air/water heat pump
- OTS controller
- A1 heat transfer medium R513A (low GWP)
- Flow temperatures up to 65°C

OCHSNER HEAT PUMPS

THE NEW HEAT PUMP CONTROLLER

OCHSNER TRONIC SMART

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

OTS
OCHSNER TRONIC SMART

AIR FALCON 212

THE PRICE/PERFORMANCE STAR OF THE OCHSNER RANGE

The new space saving M1 indoor unit in the up to date OCHSNER design meets even the highest expectations regarding appearance and noise emission. Even with the vertical split evaporator, the outdoor unit reaches a sound pressure level of no more than 35 dB(A) at a distance of 3 m in silent mode.

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

OTS
OCHSNER TRONIC SMART

60° ErP READY SG Ready

AQUA M4

PROVEN TECHNOLOGY MEETS NEW DESIGN

The reliable water/water heat pump of the GMWW series have been incorporated in the AQUA M4 series with the new-generation indoor unit.

- Water/water heat pump
- OTE controller
- Shell and tube heat exchanger on the heat source side
- Space saving, quick to install M2/M4 indoor unit
- Flow temperatures up to 65°C

OTE

65° ErP READY SG Ready

AS INDIVIDUAL AS YOUR HOME

Choose your preferred colour for the outdoor unit of your M2/M4/M6 series air/water heat pump. In addition to the standard colours – grey or white – 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

	Components	Models	Order no.	Price €
Traffic white (RAL 9016)	Outdoor unit	AIR 7 - 41, AIR HAWK 208	290735	**0,-**
Custom RAL colour	Outdoor unit	AIR 7 - 18, AIR HAWK 208	290736	**1.405,-**
		AIR 23 - 41	290737	**1.929,-**
	Super Silent Package (SSP)	AIR 7 - 18	290827	**214,-**
		AIR 23 - 41	290828	**386,-**
	Snow cover	AIR 7 - 41	290699	**180,-**
	SSP snow cover	AIR 7 - 41	290872	**280,-**
	Vertical casing for connection line	AIR 7 - 23, AIR HAWK 208	290672	**109,-**

Standard colour AIR 7 - 41:
RAL 7016, anthracite grey

Standard colour AIR HAWK 208:
RAL 9006, white aluminium

Without surcharge:
RAL 9016 traffic white

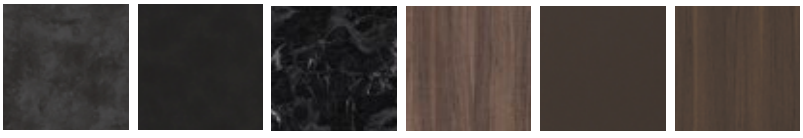
RAL 9022 Pearl light grey	RAL 9002 Grey white	RAL 1015 Light ivory	RAL 1021 Colza yellow	RAL 1018 Zinc yellow	RAL 3016 Coral red	RAL 3000 Flame red	RAL 3005 Wine red
RAL 1036 Pearl gold	RAL 6010 Grass green	RAL 6002 Leaf green	RAL 6005 Moss green	RAL 5003 Sapphire blue	RAL 8028 Terra brown	RAL 8016 Mahogany 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.

SURFACE DESIGNS

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 | Mythos | Havanna | Amaron | Muskat

Surface designs	Order no.	Price €
Vulcano	980181	**210,-**
Space	980182	**210,-**
Mythos	980183	**210,-**
Havanna	980184	**210,-**
Amaron	980185	**210,-**
Muskat	980186	**210,-**

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.

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
M1-5	**M2-1**	**M2-5**	**M4-1**	**G1-1**	**T200**		+		+	
	M2-2		**M4-2**					o	+	
	M2-3		**M4-3**				+			o
	M2-4		**M4-4**			**M6**		o		o

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

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

ACCESSORIES							
5-point anti-vibration system	-	+	+	+	-	-	+
Flexible hoses	-	+	+	+	-	+	(+)
Circulation pump, WNA	+	+	+	+	+	+	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	-	+	-	+	-	-	-

+ 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

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

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
WITH THE FOLLOWING FUNCTION AND CHARACTERISTIC
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)

■ available

[1] 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).

AIR 7 AIR 11 AIR 18	AIR 23 AIR 29 AIR 41	AIR 80	AIR HAWK 208	AIR FALCON 212	AIR EAGLE 414 AIR EAGLE 717 G1-1	AIR EAGLE 414 AIR EAGLE 717 T200	AIR BASIC 109 AIR BASIC 211 AIR BASIC 416 AIR BASIC 618 G1-1	AIR BASIC 109 AIR BASIC 211 AIR BASIC 416 AIR BASIC 618 T200	OLWI 9 OLWI 13 OLWI 18
■			■	■	■	■	■	■	■
	■	■							
■	■	■	■		■	■			
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■	
			■	■	■	■	■	■	
■	■	■							
■	■	■	■	■	■	■	■	■	■
■	■	■	■		■				
						■		■	
									■
■	■	■	■	■	■	■	■	■	

Suitable building heat load in kW [1)]

	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	–	40	42	–	50	–	78	See page
AIR 7																							22
AIR 11																							22
AIR 18																							22
AIR 23																							26
AIR 29																							26
AIR 41																							26
AIR 80																							28
AIR HAWK 208																							30
AIR FALCON 212																							32
AIR EAGLE 414																							34
AIR EAGLE 717																							34
AIR BASIC 109																							38
AIR BASIC 211																							38
AIR BASIC 416																							38
AIR BASIC 618																							38
OLWI 9																							42
OLWI 13																							42
OLWI 18																							42

AIR MULTI: Cascade packages

For heating outputs up to 164 kW, cascade packages are available. See page: 44

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**
- **DELIVERY CLASS II**

UNIT TYPE		AIR 7 C11A	AIR 11 C11A	AIR 18 C11A
Order no.		287010	287020	287030
PRICE €		**10.752,-**	**15.057,-**	**16.788,-**
Building heat load				
Suitable building heat load	kW	4 - 8	7 - 12	11 - 18
A7/W35 (EN 14511)				
Heating output	kW	6,40	10,20	15,10
Power consumption	kW	1,33	2,30	3,00
Coefficient of performance (COP)		4,80	4,50	5,00
A2/W35 (EN 14511)				
Heating output	kW	5,40	8,80	13,20
Power consumption	kW	1,32	2,20	3,00
Coefficient of performance (COP)		4,10	4,00	4,40
A-7/W35 (EN 14511)				
Heating output	kW	4,10	6,80	10,60
Power consumption	kW	1,28	2,00	3,00
Coefficient of performance (COP)		3,20	3,30	3,60
A2/W60 (EN 14511)				
Heating output	kW	4,30	7,60	12,10
Power consumption	kW	1,95	3,20	4,40
Coefficient of performance (COP)		2,20	2,40	2,80
A30/W7 (EN 14511)				
Cooling capacity	kW	3,10	8,70	10,70
Power consumption	kW	1,39	2,90	3,30
Energy efficiency ratio EER		2,20	3,00	3,20

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A++	A++	A+++	A++
P-rated EN 14825	kW	5	5	8	9	12	13
Efficiency ETAs	%	169	124	166	129	185	136
SCOP		4,30	3,17	4,21	3,30	4,70	3,48

Outdoor unit standard configuration
Total height: 1080 mm

Outdoor unit with snow cover
Total height: 1260 mm

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

[1] An internal or external electric immersion heater is required.
[2] 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 7 C11A	AIR 11 C11A	AIR 18 C11A
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
Diaphragm expansion vessel, 24 litres, (WNA), internal	1 pce	1 pce	1 pce
Flexible hoses, internal	+	+	+

OPTIONALLY AVAILABLE	AIR 7 C11A	AIR 11 C11A	AIR 18 C11A	Order no.	Price €
Basic heating/cooling package incl. remote controller with graphic display	+	+	+	980152	**594,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	+	980169	**560,-**
Electricity meter I	+	+	+	980187	**342,-**
Electric immersion heater (8.8 kW), internal [1]	+	+	+	980197	**125,-**
3-way switching module, internal [2]	+	+	+	980198	**237,-**
External electric immersion heater (6 kW) [1]	+	-	-	922508	**277,-**
External electric immersion heater (9 kW) [1]	-	+	+	922509	**301,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Indoor unit surface design	+	+	+	See page 18	
Connection line to outdoor unit	+	+	+	See page 46	

INDOOR UNIT		AIR 7 C11A	AIR 11 C11A	AIR 18 C11A
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681
Weight	kg	114	124	135
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C10A	C10A	C16A
Max. operating current	A	5,4	7,9	11,4
Max. starting current	A	13,5	20	32
Refrigerant		R407C	R407C	R407C
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	1,10	1,70	2,20
Internal pressure differential (WNA), M2-1/M4-1	mbar	109	205	324
Compressor type		Scroll	Scroll	Scroll

OUTDOOR UNIT		AIR 7 C11A		AIR 11 C11A		AIR 18 C11A	
Unit type		VHS-M 5		VHS-M 9		VHS-M 14	
Dimensions (HxWxD)	mm	1080x1290x960		1080x1290x960		1080x1290x960	
Weight	kg	93		93		93	
Number of fans	pce	1		1		1	
Air flow rate	m³/h	2100		3000		4000	
Casing type		Stainless steel, coated		Stainless steel, coated		Stainless steel, coated	
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)	30,5	28,5	32,9	30,9	36,5	33,5
Sound power level	dB(A)	48	46	50	48	54	51

OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)	AIR 7 C11A	AIR 11 C11A	AIR 18 C11A	Order no.	Price €
Snow cover (grey, RAL 7016)	1 pce	1 pce	1 pce	915763	**180,-**
Super Silent Package (SSP), 3 dB(A) sound reduction	1 pce	1 pce	1 pce	290553	**697,-**
SSP snow cover (grey, RAL 7016)	1 pce	1 pce	1 pce	915732	**280,-**
Vertical casing for connection line (grey, RAL 7016)	1 pce	1 pce	1 pce	915616	**109,-**
Custom outdoor unit colour	+	+	+	See page 18	
Outdoor unit version for coastal installation	+	+	+	on request	

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 section Engineering), 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 section Engineering, page 132).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		AIR 11 C11B	AIR 18 C11B
Order no.		287022	287032
PRICE €		**15.057,-**	**16.788,-**
Building heat load			
Suitable building heat load	kW	7 - 12	11 - 18
A7/W35 (EN 14511)			
Heating output	kW	10,20	14,80
Power consumption	kW	2,40	3,30
Coefficient of performance (COP)		4,30	4,50
A2/W35 (EN 14511)			
Heating output	kW	8,90	13,00
Power consumption	kW	2,30	3,20
Coefficient of performance (COP)		4,00	4,00
A-7/W35 (EN 14511)			
Heating output	kW	6,90	10,10
Power consumption	kW	2,20	3,20
Coefficient of performance (COP)		3,10	3,10
A2/W60 (EN 14511)			
Heating output	kW	8,40	11,50
Power consumption	kW	3,30	4,50
Coefficient of performance (COP)		2,50	2,60
A30/W7 (EN 14511)			
Cooling capacity	kW	8,60	9,30
Power consumption	kW	3,10	3,40
Energy efficiency ratio EER		2,80	2,70

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A++	A+++	A++
P-rated EN 14825	kW	8	9	12	13
Efficiency ETAs	%	166	129	185	136
SCOP		4,21	3,30	4,70	3,48

Outdoor unit standard configuration
Total height: 1080 mm

Outdoor unit with snow cover
Total height: 1260 mm

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

[1] An internal or external electric immersion heater is required.
[2] 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	**594,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	980169	**560,-**
Electric immersion heater (8.8 kW), internal [1]	+	+	980197	**125,-**
3-way switching module, internal [2]	+	+	980198	**237,-**
External electric immersion heater (9 kW) [1]	+	+	922509	**301,-**
3-way switching module (DN 32), external	+	+	290229	**291,-**
Indoor unit surface design	+	+	See page 18	
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR 11 C11B	AIR 18 C11B
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681
Weight	kg	124	135
Hydraulic connection	inch	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	1/220-240/50
Fuse protection		C25A	C40A
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	1080x1290x960		1080x1290x960	
Weight	kg	93		93	
Number of fans	pce	1		1	
Air flow rate	m³/h	3000		4000	
Casing type		Stainless steel, coated		Stainless steel, coated	
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	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	**180,-**
Super Silent Package (SSP), 3 dB(A) sound reduction	1 pce	1 pce	290553	**697,-**
SSP snow cover (grey, RAL 7016)	1 pce	1 pce	915732	**280,-**
Vertical casing for connection line (grey, RAL 7016)	1 pce	1 pce	915616	**109,-**
Custom outdoor unit colour	+	+	See page 18	
Outdoor unit version for coastal installation	+	+	on request	

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 section Engineering), 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 section Engineering, page 132).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		AIR 23 C12A	AIR 29 C12A	AIR 41 C12A
Order no.		287040	287050	287060
PRICE €		**19.856,-**	**23.138,-**	**26.475,-**
Building heat load				
Suitable building heat load	kW	17 - 22	22 - 28	28 - 41
A7/W35 (EN 14511)				
Heating output	kW	20,70	25,80	37,20
Power consumption	kW	4,50	5,60	8,10
Coefficient of performance (COP)		4,60	4,60	4,60
A2/W35 (EN 14511)				
Heating output	kW	17,20	21,80	30,30
Power consumption	kW	4,10	5,20	7,40
Coefficient of performance (COP)		4,20	4,20	4,10
A-7/W35 (EN 14511)				
Heating output	kW	13,70	17,50	25,10
Power consumption	kW	3,90	5,00	7,40
Coefficient of performance (COP)		3,50	3,50	3,40
A2/W60 (EN 14511)				
Heating output	kW	16,40	20,80	26,40
Power consumption	kW	5,80	7,30	9,30
Coefficient of performance (COP)		2,80	2,80	2,80
A30/W7 (EN 14511)				
Cooling capacity	kW	15,20	17,20	25,90
Power consumption	kW	5,00	5,60	8,30
Energy efficiency ratio EER		3,00	3,10	3,10

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A++	A++	A++	A++	A++	A++
P-rated EN 14825	kW	16	16	18	20	27	25
Efficiency ETAs	%	174	136	174	138	170	136
SCOP		4,43	3,46	4,42	3,52	4,33	3,47

Outdoor unit standard configuration
Total height: 1080 mm

Outdoor unit with snow cover
Total height: 1260 mm

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

[1] An internal or external electric immersion heater is required.

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	**594,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	+	980169	**560,-**
Electricity meter II	+	+	+	980188	**342,-**
Electric immersion heater (8.8 kW), internal [1]	+	+	-	980190	**125,-**
3-way switching module, internal	+	+	+	980191	**237,-**
External electric immersion heater (6 kW) [1]	-	+	-	922508	**277,-**
External electric immersion heater (9 kW) [1]	+	-	+	922509	**301,-**
3-way switching module (DN 40), external	+	+	-	290341	**354,-**
3-way switching module (DN 50), external	-	-	+	290342	**377,-**
Indoor unit surface design	+	+	+	See page 18	
Connection line to outdoor unit	+	+	+	See page 46	

INDOOR UNIT		AIR 23 C12A	AIR 29 C12A	AIR 41 C12A
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681
Weight	kg	148	160	164
Hydraulic connection	inch	1 1/2	1 1/2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C20A	C25A	C25A
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	1080x2220x960		1080x2220x960		1080x2220x960	
Weight	kg	136		175		180	
Number of fans	pce	2		2		2	
Air flow rate	m³/h	8000		8000		9800	
Casing type		Stainless steel, coated		Stainless steel, coated		Stainless steel, coated	
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	40,5	36,5	43,5	39,5
Sound power level	dB(A)	54	52	58	54	61	57

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	**180,-**
Super Silent Package (SSP), 3 dB(A) sound reduction	1 pce	1 pce	1 pce	290554	**1.051,-**
SSP snow cover (grey, RAL 7016)	2 pce	2 pce	2 pce	915732	**280,-**
Vertical casing for connection line (grey, RAL 7016)	1 pce	-	-	915616	**109,-**
Custom outdoor unit colour	+	+	+	See page 18	
Outdoor unit version for coastal installation	+	+	+	on request	

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 section Engineering), 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 section Engineering, page 132).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		AIR 80 C13A	AIR 80 C22A
Order no.		288600	288610
PRICE €		**45.739,-**	**45.739,-**
Building heat load			
Suitable building heat load	kW	50 - 78	50 - 78
A7/W35 (EN 14511)			
Heating output	kW	75,60	75,60
Power consumption	kW	18,90	18,90
Coefficient of performance (COP)		4,00	4,00
A2/W35 (EN 14511)			
Heating output	kW	65,10	65,10
Power consumption	kW	18,10	18,10
Coefficient of performance (COP)		3,60	3,60
A-7/W35 (EN 14511)			
Heating output	kW	47,30	47,30
Power consumption	kW	16,30	16,30
Coefficient of performance (COP)		2,90	2,90
A2/W60 (EN 14511)			
Heating output	kW	54,20	54,20
Power consumption	kW	23,60	23,60
Coefficient of performance (COP)		2,30	2,30
A30/W7 (EN 14511)			
Cooling capacity	kW	61,70	61,70
Power consumption	kW	20,60	20,60
Energy efficiency ratio EER		3,00	3,00

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A+	A+	A+	A+
P-rated EN 14825	kW	61	68	61	68
Efficiency ETAs	%	140	113	140	113
SCOP		3,58	2,90	3,58	2,90

Outdoor units AIR 80 C22A
Total height: 1080 mm

Outdoor unit AIR 80 C13A
Total height: 1149 mm

[1] An internal or external electric immersion heater is required.

INCLUDED AS STANDARD	AIR 80 C13A	AIR 80 C22A
Flow meter (WNA), external	1 pce	1 pce
Flexible hoses, 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	**594,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	980169	**560,-**
Electricity meter III	+	+	980189	**1.160,-**
Circulation pump 65-1	+	+	922462	**3.011,-**
External electric immersion heater (6 kW) [1]	+	+	922508	**277,-**
External electric immersion heater (9 kW) [1]	+	+	922509	**301,-**
3-way switching module (DN 50), external	+	+	290342	**377,-**
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR 80 C13A	AIR 80 C22A
Dimensions (HxWxD)	mm	1900x680x680	1900x680x680
Weight	kg	305	305
Hydraulic connection	inch	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50
Fuse protection		C80A	C80A
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	1149x2965x1288	(1x)	1080x2220x960	(2x)
Weight	kg	348	(1x)	180	(2x)
Number of fans	pce	3	(1x)	2	(2x)
Air flow rate	m³/h	26000	(1x)	9800	(2x)
Casing type		Stainless steel, coated		Stainless steel, coated	
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	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	**180,-**
Super Silent Package (SSP), 3 dB(A) sound reduction	-	2 pce	290676	**1.051,-**
SSP snow cover (grey, RAL 7016)	-	4 pce	915732	**280,-**
Outdoor unit version for coastal installation	+	+	on request	

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 section Engineering), 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 section Engineering, page 132).
- 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**
- **AVAILABLE FROM 4TH QUARTER**

UNIT TYPE		AIR HAWK 208 C11A	AIR HAWK 208 C11B
Order no.		287300V	287301V
PRICE €		**14.165,-**	**14.165,-**
Building heat load			
Suitable building heat load	kW	4 - 8	4 - 8
A7/W27 (EN 14825)			
Heating output range	kW	2,0 - 8,0	2,0 - 8,0
Heating output	kW	2,13	2,13
Power consumption	kW	0,34	0,34
Coefficient of performance (COP)		6,38	6,38
A7/W55 (EN 14511)			
Heating output range	kW	2,0 - 6,9	2,0 - 6,9
Heating output	kW	3,98	3,98
Power consumption	kW	1,28	1,28
Coefficient of performance (COP)		3,10	3,10
A2/W30 (EN 14825)			
Heating output range	kW	2,0 - 7,0	2,0 - 7,0
Heating output	kW	3,22	3,22
Power consumption	kW	0,71	0,71
Coefficient of performance (COP)		4,53	4,53
A-7/W34 (EN 14825)			
Heating output range	kW	2,0 - 5,7	2,0 - 5,7
Heating output	kW	5,34	5,34
Power consumption	kW	1,97	1,97
Coefficient of performance (COP)		2,71	2,71
A30/W18 (EN 14511)			
Cooling capacity	kW	6,82	6,82
Power consumption	kW	1,84	1,84
Energy efficiency ratio EER		3,76	3,76

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++
P-rated EN 14825	kW	6,0	5,6	6,0	5,6
Efficiency ETAs	%	175,2	139,5	175,2	139,5
SCOP		4,46	3,56	4,46	3,56

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

[1] 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.
[2] 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
Electric immersion heater (5.6 kW), internal	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 and cooling, incl. hardwired room temperature and humidity sensor	+	+	980207	**527,-**
Electricity meter	+	+	980212	**342,-**
Hydraulic shut-off set (4x) [1]	+	+	290538	**192,-**
3-way switching module (DN 32), external	+	+	290229	**291,-**
Indoor unit surface design	+	+	See page 18	
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR HAWK 208 C11A	AIR HAWK 208 C11B
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681
Weight	kg	151	151
Hydraulic connection	inch	1	1
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	1/220-240/50
Fuse protection		C16A	C16A
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	dB(A)	43	43

OUTDOOR UNIT		AIR HAWK 208 C11A	AIR HAWK 208 C11B
Dimensions (HxWxD)	mm	1261x1292x965	1261x1292x965
Weight	kg	88	88
Standard colour		White aluminium (RAL 9006)	White aluminium (RAL 9006)
Number of fans	pce	1	1
Air flow rate	m³/h	5460	5460
Casing type		Stainless steel, coated	Stainless steel, coated
Sound pressure level (at 3 m)	dB(A)	28	28
Sound power level	dB(A)	45	45

OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)	AIR HAWK 208 C11A	AIR HAWK 208 C11B	Order no.	Price €
Junction box connector set [2]	1 pce	1 pce	918384	**48,-**
Vertical casing for connection line (white aluminium, RAL 9006)	1 pce	1 pce	915911	**109,-**
Custom outdoor unit colour	+	+	See page 18	
Outdoor unit version for coastal installation	+	+	on request	

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 section Engineering), 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 section Engineering, page 140).
- 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 COM-PRESSOR**
- **DELIVERY CLASS II**
- **AVAILABLE FROM 4TH QUARTER**

UNIT TYPE		AIR FALCON 212 C11A	AIR FALCON 212 C11B
Order no.		287400V	287410V
PRICE €		**8.915,-**	**8.915,-**
Building heat load			
Suitable building heat load	kW	6 - 12	6 - 12
A7/W27 (EN 14825)			
Heating output	kW	8,00	8,00
Power consumption	kW	1,39	1,39
Coefficient of performance (COP)		5,75	5,75
A7/W55 (EN 14511)			
Heating output	kW	7,14	7,14
Power consumption	kW	2,47	2,47
Coefficient of performance (COP)		2,89	2,89
A2/W30 (EN 14825)			
Heating output	kW	6,40	6,40
Power consumption	kW	1,58	1,58
Coefficient of performance (COP)		4,05	4,05
A-7/W34 (EN 14825)			
Heating output	kW	6,50	6,50
Power consumption	kW	2,38	2,38
Coefficient of performance (COP)		2,73	2,73
A30/W18 (EN 14511)			
Cooling capacity	kW	7,40	7,40
Power consumption	kW	1,65	1,65
Energy efficiency ratio EER		4,48	4,48

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A++	A++	A++
P-rated EN 14825	kW	7,1	6,4	7,1	6,4
Efficiency ETAs	%	171	130	171	130
SCOP		4,4	2,94	4,4	2,94

AIR FALCON: Outdoor unit
Total height: 998 mm

[1] 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	AIR FALCON 212 C11B
Electric immersion heater (5.6 kW), internal	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

OPTIONALLY AVAILABLE	AIR FALCON 212 C11A	AIR FALCON 212 C11B	Order no.	Price €
Heating and cooling, incl. hardwired room temperature and humidity sensor	+	+	980207	**527,-**
Hydraulic shut-off set (4x) [1]	+	+	290538	**192,-**
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR FALCON 212 C11A	AIR FALCON 212 C11B
Dimensions (HxWxD)	mm	1285x400x681	1285x400x681
Weight	kg	91	91
Hydraulic connection	inch	1	1
Refrigerant		R32	R32
Min. flow rate, heating (WNA)	m³/h	0,30	0,30
Min. flow rate, cooling/defrost (WNA)	m³/h	0,85	0,85
Min. flow rate, DHW (WNA)	m³/h	0,30	0,30

OUTDOOR UNIT		AIR FALCON 212 C11A		AIR FALCON 212 C11B	
Dimensions (HxWxD)	mm	998x940x384		998x940x384	
Weight	kg	73		73	
Standard colour		Grey (RAL 7016)		Grey (RAL 7016)	
Phases/nominal voltage/frequency	~/V/Hz	3/400/50		1/220-240/50	
Fuse protection		C16A		C25A	
Rated current	A	10		22	
Max. starting current	A	10		10	
Compressor type		Rotary piston		Rotary piston	
Number of fans		1		1	
Air flow rate	m³/h	3960		3960	
Operating mode		Nominal	Silent mode	Nominal	Silent mode
Sound pressure level (at 3 m)	dB(A)	41,5	35	41,5	35
Sound power level	dB(A)	59	53	59	53

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 section Engineering), 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 section Engineering, page 140).
- 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 COM-PRESSOR**
- **DELIVERY CLASS II**

UNIT TYPE		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1
Order no.		285630	285640
PRICE €		**16.766,-**	**18.974,-**
Building heat load			
Suitable building heat load	kW	8 - 14	14 - 21
A7/W35 (EN 14511)			
Heating output range	kW	3,50 - 10,60	6,70 - 8,30
Heating output	kW	6,00	7,10
Power consumption	kW	1,30	1,50
Coefficient of performance (COP)		4,50	4,80
A2/W35 (EN 14511)			
Heating output range	kW	3,10 - 10,20	6,00 - 10,40
Heating output	kW	5,50	7,10
Power consumption	kW	1,40	1,70
Coefficient of performance (COP)		4,00	4,20
A-7/W34 (EN 14511)			
Heating output range	kW	2,60 - 8,60	5,20 - 14,10
Heating output	kW	7,80	12,80
Power consumption	kW	2,70	4,10
Coefficient of performance (COP)		2,90	3,10
A7/W55 (EN 14511)			
Heating output range	kW	3,90 - 11,00	6,60 - 8,60
Heating output	kW	6,40	8,60
Power consumption	kW	2,10	2,70
Coefficient of performance (COP)		3,10	3,30
A35/W18 (EN 14511)			
Cooling capacity range	kW	2,60 - 6,60	5,30 - 12,90
Cooling capacity	kW	5,60	7,50
Power consumption	kW	1,70	2,50
Energy efficiency ratio EER		3,30	3,30

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A++	A++	A++
P-rated EN 14825	kW	10	10	17	17
Efficiency ETAs	%	161	132	174	141
SCOP		4,10	3,36	4,42	3,60

AIR EAGLE: Outdoor unit with snow cover
Total height: 1260 mm

[1] 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
Electric immersion heater (8.8 kW), internal	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	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	**301,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server)	+	+	980171	**944,-**
Hydraulic shut-off set (4x) [1]	+	+	290538	**192,-**
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR EAGLE 414 C11B G1-1	AIR EAGLE 717 C11A G1-1
Dimensions (HxWxD)	mm	1150x400x650	1150x400x650
Weight	kg	75	75
Hydraulic connection	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	1260x1480x965	1260x1480x965
Weight	kg	200	200
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	3/400/50
Fuse protection		C20A	C16A
Max. operating current	A	20	16
Max. starting current	A	10	10
Compressor type		Scroll	Scroll
Casing type		Stainless steel, coated	Stainless steel, coated
Number of fans		1	1
Air flow rate	m³/h	4000	4000
Sound pressure level (at 3 m)	dB(A)	39,5	39,5
Sound power level	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	**160,-**

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 section Engineering), 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 section Engineering, page 140).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER AIR EAGLE MULTI TOWER

INVERTER AIR/WATER HEAT PUMP
INCL. HORIZONTAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)

- **MULTI TOWER AS IN-DOOR UNIT**
- **HEATING OR HEATING/ COOLING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **VARIABLE SPEED COM-PRESSOR**
- **DELIVERY CLASS II**

UNIT TYPE		AIR EAGLE 414 C11B T200	AIR EAGLE 717 C11A T200
Order no.		285902	285912
PRICE €		**18.753,-**	**20.959,-**
Building heat load			
Suitable building heat load	kW	8 - 14	14 - 21
A7/W35 (EN 14511)			
Heating output range	kW	3,50 - 10,60	6,70 - 8,30
Heating output	kW	6,00	7,10
Power consumption	kW	1,30	1,50
Coefficient of performance (COP)		4,50	4,80
A2/W35 (EN 14511)			
Heating output range	kW	3,10 - 10,20	6,00 - 10,40
Heating output	kW	5,50	7,10
Power consumption	kW	1,40	1,70
Coefficient of performance (COP)		4,00	4,20
A-7/W34 (EN 14511)			
Heating output range	kW	2,60 - 8,60	5,20 - 14,10
Heating output	kW	7,80	12,80
Power consumption	kW	2,70	4,10
Coefficient of performance (COP)		2,90	3,10
A7/W55 (EN 14511)			
Heating output range	kW	3,90 - 11,00	6,60 - 8,60
Heating output	kW	6,40	8,60
Power consumption	kW	2,10	2,70
Coefficient of performance (COP)		3,10	3,30
A35/W18 (EN 14511)			
Cooling capacity range	kW	2,60 - 6,60	5,30 - 12,90
Cooling capacity	kW	5,60	7,50
Power consumption	kW	1,70	2,50
Energy efficiency ratio EER		3,30	3,30

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A++	A++	A++
P-rated EN 14825	kW	10	10	17	17
Efficiency ETAs	%	161	132	174	141
SCOP		4,10	3,36	4,42	3,60

AIR EAGLE: Outdoor unit with snow cover
Total height: 1260 mm

[1] When using an external heating circulation pump (e.g. heating circuit with mixing valve), replace the internal heating circulation pump with the adaptor (brass tube).
[2] 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 T200	AIR EAGLE 717 C11A T200
Electric immersion heater (8.8 kW), internal	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
Snow cover for the outdoor unit	1 pce	1 pce

OPTIONALLY AVAILABLE	AIR EAGLE 414 C11B T200	AIR EAGLE 717 C11A T200	Order no.	Price €
Heating/cooling incl. remote controller with graphic display	+	+	980170	**301,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server)	+	+	980171	**944,-**
Heating circulation pump adaptor [1]	+	+	914383	**57,-**
Hydraulic shut-off set (4x) [2]	+	+	290538	**192,-**
Connection line to outdoor unit	+	+	See page 46	

INDOOR UNIT		AIR EAGLE 414 C11B T200	AIR EAGLE 717 C11A T200
Dimensions (HxWxD)	mm	1908x680x871	1908x680x871
Tilt height	mm	2107	2107
Weight / Filled weight	kg	203 / 471	203 / 471
Hydraulic connection	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	650	380
DHW tank			
Nominal capacity	l	168	168
Tank material		Enamelled steel	Enamelled steel
Draw-off rate	l/min	25	25
Energy efficiency class		C	C
Buffer tank			
Nominal capacity	l	100	100
Tank material		Steel	Steel

OUTDOOR UNIT		AIR EAGLE 414 C11B T200	AIR EAGLE 717 C11A T200
Dimensions (HxWxD)	mm	1260x1480x965	1260x1480x965
Weight	kg	200	200
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	3/400/50
Fuse protection		C20A	C16A
Max. operating current	A	20	16
Max. starting current	A	10	10
Compressor type		Scroll	Scroll
Casing type		Stainless steel, coated	Stainless steel, coated
Number of fans		1	1
Air flow rate	m³/h	4000	4000
Sound pressure level (at 3 m)	dB(A)	39,5	39,5
Sound power level	dB(A)	57	57

OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)	AIR EAGLE 414 C11B T200	AIR EAGLE 717 C11A T200	Order no.	Price €
Anti-vibration package for flat roof installation	+	+	290698	**160,-**

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 section Engineering), 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 section Engineering, page 140).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER AIR BASIC

INVERTER AIR/WATER HEAT PUMP
INCL. VERTICAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)

- **GOLF INDOOR UNIT**
- **HEATING OR HEATING/ COOLING**
- **MAX. FLOW TEMP.: 55°C**
- **OTE CONTROLLER**
- **VARIABLE SPEED COMPRESSOR**
- **DELIVERY CLASS II**

UNIT TYPE		AIR BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1
Order no.		285600	285610	285615	285620
PRICE €		**6.290,-**	**7.340,-**	**10.490,-**	**11.638,-**
Building heat load					
Suitable building heat load	kW	4 - 6	6 - 12	12 - 15	12 - 15
A7/W35 (EN 14511)					
Heating output range	kW	3,08 - 6,24	1,90 - 10,20	7,26 - 16,58	7,26 - 16,58
Heating output	kW	4,37	7,00	13,45	13,45
Power consumption	kW	0,94	1,60	3,11	3,11
Coefficient of performance (COP)		4,63	4,40	4,33	4,33
A2/W35 (EN 14511)					
Heating output range	kW	1,25 - 3,30	1,30 - 8,50	4,86 - 10,54	4,86 - 10,54
Heating output	kW	3,09	5,50	9,27	9,27
Power consumption	kW	0,92	1,50	2,87	2,87
Coefficient of performance (COP)		3,35	3,70	3,23	3,23
A-7/W35 (EN 14511)					
Heating output range	kW	1,30 - 2,95	1,20 - 6,80	3,63 - 8,67	3,63 - 8,67
Heating output	kW	2,59	4,20	5,38	5,38
Power consumption	kW	0,98	1,40	2,31	2,31
Coefficient of performance (COP)		2,64	3,00	2,32	2,32
A2/W50 (EN 14511)					
Heating output range	kW	2,09 - 3,33	1,30 - 7,30	3,40 - 9,50	3,40 - 9,50
Heating output	kW	3,04	5,40	6,70	6,70
Power consumption	kW	1,27	2,50	3,32	3,32
Coefficient of performance (COP)		2,40	2,20	2,22	2,22
A35/W12 (EN 14511)					
Cooling capacity range	kW	1,85 - 5,18	1,60 - 10,00	5,60 - 12,61	5,60 - 12,60
Cooling capacity	kW	3,14	7,00	10,19	10,19
Power consumption	kW	1,04	2,50	3,41	3,41
Energy efficiency ratio EER		3,02	2,80	2,99	2,99

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A++	A+	A++	A+	A++	A+
P-rated EN 14825	kW	3	3	8	5	10	8	10	8
Efficiency ETAs	%	162	110	159	110	156	112	156	112
SCOP		4,13	2,84	4,04	2,82	3,97	2,86	3,97	2,86

AIR BASIC: Outdoor unit
AIR BASIC 416/618

AIR BASIC: Outdoor unit
AIR BASIC 211

AIR BASIC: Outdoor unit
AIR BASIC 109

[1] 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 BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1
Electric immersion heater (5.9 kW), internal	1 pce	-	-	-
Electric immersion heater (8.8 kW), internal	-	1 pce	1 pce	1 pce
Flow meter (WNA), internal	1 pce	1 pce	1 pce	1 pce
3-way switching module (DHW heating), 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
Pressure gauge	1 pce	1 pce	1 pce	1 pce
Bypass	1 pce	1 pce	1 pce	1 pce

OPTIONALLY AVAILABLE	AIR BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1	Order no.	Price €
Heating/cooling incl. remote controller with graphic display	+	+	+	+	980170	**301,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server)	+	+	+	+	980171	**944,-**
Hydraulic shut-off set (4x) [1]	+	+	+	+	290538	**192,-**
Connection line to outdoor unit	+	+	+	+	See page 46	

INDOOR UNIT		AIR BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1
Dimensions (HxWxD)	mm	1150x400x650	1150x400x650	1150x400x650	1150x400x650
Weight	kg	75	75	75	75
Hydraulic connection	inch	1	1	1	1
Refrigerant		R410A	R410A	R410A	R410A
Temperature differential (WNA)	K	5	5	5	5
Flow rate (WNA)	m³/h	0,80	1,43	1,90	1,90
Residual head (WNA)	mbar	700	430	245	245

OUTDOOR UNIT		AIR BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1
Dimensions (HxWxD)	mm	610x869x290	865x1040x340	1377x950x340	1377x950x340
Weight	kg	38	66	130	130
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)	Grey (RAL 7016)	Grey (RAL 7016)
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	1/220-240/50	3/400/50	1/220-240/50
Fuse protection		C16A	C16A	C20A	C32A
Max. operating current	A	13,5	12,2	10	28
Max. starting current / with blocked rotor	A	10,5 / 20	15 / 25	15 / 20	10 / 32
Compressor type		Rotary piston	Rotary piston	Scroll	Scroll
Number of fans		1	1	2	2
Air flow rate	m³/h	2500	4590	7000	7000
Sound pressure level (at 3 m)	dB(A)	42,5	44,5	46,5	46,5
Sound power level	dB(A)	60	62	64	64

OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)	AIR BASIC 109 C11B G1-1	AIR BASIC 211 C11B G1-1	AIR BASIC 416 C12A G1-1	AIR BASIC 618 C12B G1-1	Order no.	Price €
Anti-vibration base with floor bracket	+	+	+	+	912633	**70,-**
Wall mounting bracket	+	+	+	+	290545	**183,-**
Condensate drip tray incl. ribbon heater	+	+	+	+	290657	**1.582,-**

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 section Engineering), 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 section Engineering, page 140).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER AIR BASIC MULTI TOWER

INVERTER AIR/WATER HEAT PUMP
INCL. VERTICAL SPLIT EVAPORATOR (COMPRESSOR ON OUTSIDE)

- **MULTI TOWER AS INDOOR UNIT**
- **HEATING OR HEATING/COOLING**
- **MAX. FLOW TEMP.: 55°C**
- **OTE CONTROLLER**
- **VARIABLE SPEED COMPRESSOR**
- **DELIVERY CLASS II**

UNIT TYPE		AIR BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200
Order no.		285922	285932	285937	285942
PRICE €		**8.390,-**	**9.440,-**	**12.590,-**	**13.657,-**
Building heat load					
Suitable building heat load	kW	4 - 6	6 - 12	12 - 15	12 - 15
A7/W35 (EN 14511)					
Heating output range	kW	3,08 - 6,24	1,90 - 10,20	7,26 - 16,58	7,26 - 16,58
Heating output	kW	4,37	7,00	13,45	13,45
Power consumption	kW	0,94	1,60	3,11	3,11
Coefficient of performance (COP)		4,63	4,40	4,33	4,33
A2/W35 (EN 14511)					
Heating output range	kW	1,25 - 3,30	1,30 - 8,50	4,86 - 10,54	4,86 - 10,54
Heating output	kW	3,09	5,50	9,27	9,27
Power consumption	kW	0,92	1,50	2,87	2,87
Coefficient of performance (COP)		3,35	3,70	3,23	3,23
A-7/W35 (EN 14511)					
Heating output range	kW	1,30 - 2,95	1,20 - 6,80	3,63 - 8,67	3,63 - 8,67
Heating output	kW	2,59	4,20	5,38	5,38
Power consumption	kW	0,98	1,40	2,31	2,31
Coefficient of performance (COP)		2,64	3,00	2,32	2,32
A2/W50 (EN 14511)					
Heating output range	kW	2,09 - 3,33	1,30 - 7,30	3,40 - 9,50	3,40 - 9,50
Heating output	kW	3,04	5,40	6,70	6,70
Power consumption	kW	1,27	2,50	3,32	3,32
Coefficient of performance (COP)		2,40	2,20	2,22	2,22
A35/W18 (EN 14511)					
Cooling capacity range	kW	2,22 - 6,46	1,80 - 11,10	5,49 - 13,89	5,49 - 13,89
Cooling capacity	kW	4,91	7,90	12,62	12,62
Power consumption	kW	1,02	2,60	4,19	4,19
Energy efficiency ratio EER		4,81	3,00	3,27	3,27

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A++	A+	A++	A+	A++	A+
P-rated EN 14825	kW	3	3	8	5	10	8	10	8
Efficiency ETAs	%	162	110	159	110	156	112	156	112
SCOP		4,13	2,84	4,04	2,82	3,97	2,86	3,97	2,86

AIR BASIC: Outdoor unit
AIR BASIC 416/618

AIR BASIC: Outdoor unit
AIR BASIC 211

AIR BASIC: Outdoor unit
AIR BASIC 109

[1] When using an external heating circulation pump (e.g. heating circuit with mixing valve), replace the internal heating circulation pump with the adaptor (brass tube).
[2] 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 BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200
Electric immersion heater (5.9 kW), internal	1 pce	-	-	-
Electric immersion heater (8.8 kW), internal	-	1 pce	1 pce	1 pce
Flow meter (WNA), internal	1 pce	1 pce	1 pce	1 pce
3-way switching module (DHW heating), 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

OPTIONALLY AVAILABLE	AIR BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200	Order no.	Price €
Heating/cooling incl. remote controller with graphic display	+	+	+	+	980170	**301,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server)	+	+	+	+	980171	**944,-**
Heating circulation pump adaptor [1]	+	+	+	+	914383	**57,-**
Hydraulic shut-off set (4x) [2]	+	+	+	+	290538	**192,-**
Connection line to outdoor unit	+	+	+	+	See page 46	

INDOOR UNIT		AIR BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200
Dimensions (HxWxD)	mm	1908x680x871	1908x680x871	1908x680x871	1908x680x871
Tilt height	mm	2107	2107	2107	2107
Weight / Filled weight	kg	203 / 471	203 / 471	203 / 471	203 / 471
Hydraulic connection	inch	1	1	1	1
Refrigerant		R410A	R410A	R410A	R410A
Temperature differential (WNA)	K	5	5	5	5
Flow rate (WNA)	m³/h	0,80	1,43	1,90	1,90
Residual head (WNA)	mbar	700	430	245	245
DHW tank					
Nominal capacity	l	168	168	168	168
Tank material		Enamelled steel	Enamelled steel	Enamelled steel	Enamelled steel
Draw-off rate	l/min	25	25	25	25
Energy efficiency class		C	C	C	C
Buffer tank					
Nominal capacity	l	100	100	100	100
Tank material		Steel	Steel	Steel	Steel

OUTDOOR UNIT		AIR BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200
Dimensions (HxWxD)	mm	610x869x290	865x1040x340	1377x950x340	1377x950x340
Weight	kg	38	66	130	130
Standard colour		Grey (RAL 7016)	Grey (RAL 7016)	Grey (RAL 7016)	Grey (RAL 7016)
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	1/220-240/50	3/400/50	1/220-240/50
Fuse protection		C16A	C16A	C20A	C32A
Max. operating current	A	13,5	12,2	10	28
Max. starting current / with blocked rotor	A	10,5 / 20	15 / 25	15 / 20	10 / 32
Compressor type		Rotary piston	Rotary piston	Scroll	Scroll
Number of fans		1	1	2	2
Air flow rate	m³/h	2500	4590	7000	7000
Sound pressure level (at 3 m)	dB(A)	42,5	44,5	46,5	46,5
Sound power level	dB(A)	60	62	64	64

OPTIONAL, OUTDOOR UNIT (PRICE/UNIT)	AIR BASIC 109 C11B T200	AIR BASIC 211 C11B T200	AIR BASIC 416 C12A T200	AIR BASIC 618 C12B T200	Order no.	Price €
Anti-vibration base with floor bracket	+	+	+	+	912633	**70,-**
Wall mounting bracket	+	+	+	+	290545	**183,-**
Condensate drip tray incl. ribbon heater	+	+	+	+	290657	**1.582,-**

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 section Engineering), 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 section Engineering, page 140).
- 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

- **HEATING**
- **MAX. FLOW TEMP.: 60°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS II**

UNIT TYPE		OLWI 9	OLWI 13	OLWI 18
Order no.		282530	282580	282630
PRICE €		**15.712,-**	**15.927,-**	**16.143,-**
Building heat load				
Suitable building heat load	kW	7 - 11	11 - 15	15 - 21
A10/W35 (EN 14511)				
Heating output	kW	9,50	13,40	18,50
Power consumption	kW	2,10	2,90	4,20
Coefficient of performance (COP)		4,50	4,60	4,40
A7/W35 (EN 14511)				
Heating output	kW	8,90	12,90	16,60
Power consumption	kW	2,00	2,90	4,10
Coefficient of performance (COP)		4,40	4,40	4,00
A2/W35 (EN 14511)				
Heating output	kW	8,10	11,30	15,70
Power consumption	kW	2,10	3,00	4,30
Coefficient of performance (COP)		3,80	3,80	3,60
A-7/W35 (EN 14511)				
Heating output	kW	6,80	9,70	13,20
Power consumption	kW	2,10	3,00	4,20
Coefficient of performance (COP)		3,20	3,30	3,10

ENERGY EFFICIENCY CLASS							
at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A++	A+	A++	A+
P-rated EN 14825	kW	8	9	11	13	15	18
Efficiency ETAs	%	164	122	164	121	154	118
SCOP		4,17	3,12	4,17	3,10	3,93	3,03

[1] 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 page 135.

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
Electric immersion heater (8.8 kW), internal	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	**891,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Condensate pump PK10	+	+	+	912814	**225,-**
LSWP 560 (heat-insulated air hose, 4 m)	+	+	+	9120074	**432,-**
Wall conduit AWG 560 H (horizontal, with weather grille) [1]	+	+	+	912716	**0,-**
Wall conduit AWG 560 L (horizontal, for cellar shaft) [1]	+	+	+	912812	**0,-**

INDOOR UNIT		OLWI 9	OLWI 13	OLWI 18
Dimensions (HxWxD)	mm	1820x800x1240	1820x800x1240	1820x800x1240
Weight	kg	295	305	310
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C16A	C16A	C16A
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

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 section Engineering), 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 section Engineering, page 132).
- 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**
- **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 €		**47.654,-**	**71.482,-**	**95.309,-**
A7/W35 (EN 14511)				
Heating output	kW	37,2 - 74,4	37,2 - 111,6	37,2 - 148,8
Power consumption	kW	8,1 - 16,2	8,1 - 24,3	8,1 - 32,4
Coefficient of performance (COP)		4,6	4,6	4,6
A2/W35 (EN 14511)				
Heating output	kW	30,3 - 60,6	30,3 - 90,9	30,3 - 121,2
Power consumption	kW	7,4 - 14,8	7,4 - 22,2	7,4 - 29,6
Coefficient of performance (COP)		4,1	4,1	4,1
A-7/W35 (EN 14511)				
Heating output	kW	25,1 - 50,2	25,1 - 75,3	25,1 - 100,4
Power consumption	kW	7,4 - 14,8	7,4 - 22,2	7,4 - 29,6
Coefficient of performance (COP)		3,4	3,4	3,4
A2/W60 (EN 14511)				
Heating output	kW	26,4 - 52,8	26,4 - 79,2	26,4 - 105,6
Power consumption	kW	9,3 - 18,6	9,3 - 27,9	9,3 - 37,2
Coefficient of performance (COP)		2,8	2,8	2,8
A30/W7 (EN 14511)				
Cooling capacity	kW	25,9 - 51,8	25,9 - 77,7	25,9 - 103,6
Power consumption	kW	8,3 - 16,6	8,3 - 24,9	8,3 - 33,2
Energy efficiency ratio EER		3,1	3,1	3,1

AIR MULTI DUO
Two outdoor units

AIR MULTI TRIO
Three outdoor units

AIR MULTI QUATTRO
Four outdoor units

[1] An internal or external electric immersion heater is required.

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	**594,-**
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	1 pce	1 pce	1 pce	980169	**560,-**
Electricity meter II	2 pce	3 pce	4 pce	980188	**342,-**
External electric immersion heater (9 kW) [1]	+	+	+	922509	**301,-**
3-way switching module (DN 50), external	+	+	+	290342	**377,-**
Indoor unit surface design	+	+	+	See page 18	
Connection line to outdoor unit	+	+	+	See page 46	

INDOOR UNIT		AIR MULTI DUO 82 C24A	AIR MULTI TRIO 123 C36A	AIR MULTI QUATTRO 164 C48A
Dimensions (HxWxD)	mm	1285x1700x681	1285x2800x681	1285x3900x681
Weight	kg	328	492	656
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C25A / C25A	C25A / C25A / C25A	C25A / C25A / C25A / C25A
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	1080x2220x960	(2x)	1080x2220x960	(3x)	1080x2220x960	(4x)
Weight	kg	180	(2x)	180	(3x)	180	(4x)
Number of fans	pce	2	(2x)	2	(3x)	2	(4x)
Air flow rate	m³/h	9800	(2x)	9800	(3x)	9800	(4x)
Casing type		Stainless steel, coated		Stainless steel, coated		Stainless steel, coated	
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	49	46	52	49
Sound power level	dB(A)	64	61	67	64	70	67

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	**180,-**
Super Silent Package (SSP), 3 dB(A) sound reduction	2 pce	3 pce	4 pce	290554	**1.051,-**
SSP snow cover (grey, RAL 7016)	4 pce	6 pce	8 pce	915732	**280,-**
Outdoor unit version for coastal installation	+	+	+	on request	

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 section Engineering), 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
- 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 section Engineering, page 144).

CONNECTION LINES

AIR M2/M4: CONNECTION LINE SET

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

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

	5 m			10 m			15 m			20 m		
	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €
AIR 7	II	290739	**504,-**	II	290740	**770,-**	II	290741	**1.109,-**	II	290742	**1.401,-**
AIR 11	II	290743	**528,-**	II	290744	**845,-**	II	290745	**1.233,-**	II	290746	**1.563,-**
AIR 18	II	290747	**544,-**	II	290748	**845,-**	II	290749	**1.621,-**	II	290750	**2.077,-**
AIR 23	II	290751	**544,-**	II	290752	**1.080,-**	II	290753	**1.621,-**	II	290754	**2.077,-**
AIR 29	II	290755	**669,-**	II	290756	**1.080,-**	II	290757	**1.791,-**	II	290758	**2.302,-**
AIR 41	II	290759	**938,-**	II	290760	**1.590,-**	II	290761 [2)]	**2.459,-**			

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.

DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS		Order no.	Price € (per m)
AIR 80 C13A **AIR 80 C22A**	3-16 m	990850	**149,-**

CABLE HARNESS

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

CABLE HARNESS FOR AIR 80 [1)]

Cable length	Delivery class	Order no.	Price €
5 m	II	929957	**223,-**
10 m	II	929958	**294,-**
15 m	I	929935	**374,-**
20 m	II	929959	**457,-**
25 m	I	929960	**540,-**

[1)] In the AIR 80 C22A, one cable harness to be installed per evaporator.
[2)] Only for 290761 (AIR 41): 16 m refrigeration pipe

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 partner.

AIR HAWK: CONNECTION LINE SET

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

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

	5 m			10 m			15 m			20 m		
	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €
AIR HAWK 208	II	290797	**419,-**	II	290798	**646,-**	II	290799	**872,-**	II	290800	**1.087,-**

AIR EAGLE: CONNECTION LINE SET

A CONNECTION LINE SET FROM OCHSNER SIMPLIFIES AND SPEEDS UP LAYING OF 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

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: connection line set for 25 m includes a 25 m long cable harness).

DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS

	5 m			10 m			15 m			20 m			25 m		
	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €	Delivery class	Order no.	Price €
AIR EAGLE 414	II	290787	**571,-**	II	290788	**958,-**	II	290789	**1.465,-**	II	290790	**1.889,-**	II	290791	**2.219,-**
AIR EAGLE 717	II	290792	**560,-**	II	290793	**959,-**	II	290794	**1.476,-**	II	290795	**1.894,-**	II	290796	**2.253,-**

AIR FALCON AND AIR BASIC: CONNECTION LINES AS BULK STOCK

DISTANCE BETWEEN THE INDOOR AND OUTDOOR UNITS		Order no.	Price € (per m)
AIR FALCON 212	3-20 m	991780	**44,-**
AIR BASIC 109	3-20 m	991151	**44,-**
AIR BASIC 211	3-20 m	990953	**44,-**
AIR BASIC 416			
AIR BASIC 618			

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
WITH THE FOLLOWING FUNCTION AND CHARACTERISTIC
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 HPLA TERRA 27 HPLA	TERRA 40 HPLA TERRA 61 HPLA TERRA 76 HPLA	TERRA 40 CPLA TERRA 61 CPLA TERRA 76 CPLA	GMSW 7 HK PLUS (VX) GMSW 10 HK PLUS (VX)	GMSW 12 HK PLUS GMSW 15 HK PLUS GMSW 17 HK PLUS	GMSW 28 HK GMSW 38 HK
■	■			■	■	
	■	■	■			■
■	■	■	■	■	■	
■	■	■	■	■	■	■
■	■	■	■	■	■	■
			■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	
■	■	■	■	■	■	■

Suitable building heat load in kW [1)]

	4	6	8	10	12	14	16	18	–	24	26	28	30	–	34	–	40	–	52	–	62	64	–	78	See page
TERRA 6	■																								50
TERRA 8		■																							50
TERRA 11			■																						50
TERRA 14					■																				50
TERRA 18						■																			54
TERRA 27								■			■														54
TERRA 40															■										56
TERRA 61																			■						56
TERRA 76																						■			56
GMSW 7 HK plus (VX)		■																							60
GMSW 10 HK plus (VX)			■																						60
GMSW 12 HK plus				■																					64
GMSW 15 HK plus					■																				64
GMSW 17 HK plus						■																			64
GMSW 28 HK								■																	66
GMSW 38 HK											■														66

TERRA MULTI: Cascade packages

For heating outputs up to 310 kW, cascade packages are available. See page: 68

■ available

[1)] 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**
- **DELIVERY CLASS II**

UNIT TYPE		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA
Order no.		265010	265020	265030	265040
PRICE €		**8.394,-**	**8.824,-**	**9.900,-**	**10.977,-**
Building heat load					
Suitable building heat load	kW	4 - 6	6 - 8	8 - 11	11 - 14
B0/W35 (EN 14511)					
Heating output	kW	5,80	7,50	10,30	13,20
Power consumption	kW	1,20	1,55	2,05	2,75
Coefficient of performance (COP)		4,80	4,80	5,00	4,80
B0/W50 (EN 14511)					
Heating output	kW	5,30	6,80	9,30	12,10
Power consumption	kW	1,70	2,30	3,10	3,90
Coefficient of performance (COP)		3,10	3,00	3,00	3,10
B0/W60 (EN 14511)					
Heating output	kW	5,00	6,20	8,80	11,80
Power consumption	kW	2,00	2,50	3,70	4,40
Coefficient of performance (COP)		2,50	2,50	2,40	2,70

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P-rated EN 14825	kW	6	5	8	7	10	9	13	12
Efficiency ETAs	%	199	131	216	127	221	134	208	131
SCOP		5,16	3,48	5,59	3,38	5,73	3,55	5,40	3,48

[1] 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.
[2] For the scope of delivery of the passive cooling set, see page 147.
[3] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[4] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[5] For the scope of delivery of an ESK brine collector set, see page 147.

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 €
Electric immersion heater (8.8 kW), internal	+	+	+	+	980201	**125,-**
Electricity meter I	+	+	+	+	980187	**342,-**
3-way switching module, internal [1]	+	+	+	+	980202	**237,-**
3-way switching module (DN 32), external	+	+	+	+	290229	**291,-**
Passive cooling set 1 [2]	+	+	+	-	290864	**1.389,-**
Passive cooling set 2 [2]	-	-	-	+	290865	**1.553,-**
Frost protection function for monitoring heat source temperature	+	+	+	+	980200	**96,-**
Indoor unit surface design	+	+	+	+	See page 18	

INDOOR UNIT		TERRA 6 HPLA	TERRA 8 HPLA	TERRA 11 HPLA	TERRA 14 HPLA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681	1285x600x681
Weight	kg	200	210	220	230
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50	3/400/50
Max. operating current	A	4,8	6,2	7,4	9,7
Fuse protection		C16A	C16A	C16A	C16A
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) [3]	+	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [4]	+	+	+	+	928137	**222,-**
ESK 3 brine collector set [5]	+	-	-	-	290166	**1.765,-**
ESK 4 brine collector set [5]	-	+	-	-	290167	**2.187,-**
ESK 6 brine collector set [5]	-	-	+	-	290169	**2.906,-**
ESK 7 brine collector set [5]	-	-	-	+	290170	**3.395,-**
Brine distributor	+	+	+	+	See page 119	

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB
Order no.		265012	265022	265032	265042
PRICE €		**8.394,-**	**8.824,-**	**9.900,-**	**10.977,-**
Building heat load					
Suitable building heat load	kW	4 - 6	6 - 8	8 - 11	11 - 14
B0/W35 (EN 14511)					
Heating output	kW	5,80	7,50	10,30	13,20
Power consumption	kW	1,20	1,55	2,05	2,70
Coefficient of performance (COP)		4,80	4,80	5,00	4,80
B0/W50 (EN 14511)					
Heating output	kW	5,30	6,80	9,30	12,10
Power consumption	kW	1,70	2,30	3,10	3,90
Coefficient of performance (COP)		3,10	3,00	3,00	3,10
B0/W60 (EN 14511)					
Heating output	kW	5,00	6,20	8,80	11,80
Power consumption	kW	2,00	2,50	3,70	4,40
Coefficient of performance (COP)		2,50	2,50	2,40	2,70

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P-rated EN 14825	kW	6	5	8	7	10	9	13	12
Efficiency ETAs	%	199	131	216	127	221	134	208	131
SCOP		5,16	3,48	5,59	3,38	5,73	3,55	5,40	3,48

[1] 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.
[2] For the scope of delivery of the passive cooling set, see page 147.
[3] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[4] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[5] For the scope of delivery of an ESK brine collector set, see page 147.

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 €
Electric immersion heater (8.8 kW), internal	+	+	+	+	980201	**125,-**
3-way switching module, internal [1]	+	+	+	+	980202	**237,-**
3-way switching module (DN 32), external	+	+	+	+	290229	**291,-**
Passive cooling set 1 [2]	+	+	+	-	290864	**1.389,-**
Passive cooling set 2 [2]	-	-	-	+	290865	**1.553,-**
Frost protection function for monitoring heat source temperature	+	+	+	+	980200	**96,-**
Indoor unit surface design	+	+	+	+	See page 18	

INDOOR UNIT		TERRA 6 HPLB	TERRA 8 HPLB	TERRA 11 HPLB	TERRA 14 HPLB
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681	1285x600x681
Weight	kg	200	210	220	230
Hydraulic connection	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		C16A	C25A	C25A	C32A
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) [3]	+	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [4]	+	+	+	+	928137	**222,-**
ESK 3 brine collector set [5]	+	-	-	-	290166	**1.765,-**
ESK 4 brine collector set [5]	-	+	-	-	290167	**2.187,-**
ESK 6 brine collector set [5]	-	-	+	-	290169	**2.906,-**
ESK 7 brine collector set [5]	-	-	-	+	290170	**3.395,-**
Brine distributor	+	+	+	+	See page 119	

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		TERRA 18 HPLA	TERRA 27 HPLA
Order no.		265050	265070
PRICE €		**11.838,-**	**15.712,-**
Building heat load			
Suitable building heat load	kW	14 - 18	18 - 27
B0/W35 (EN 14511)			
Heating output	kW	17,00	26,10
Power consumption	kW	3,80	5,80
Coefficient of performance (COP)		4,50	4,50
B0/W50 (EN 14511)			
Heating output	kW	16,10	23,40
Power consumption	kW	5,10	7,40
Coefficient of performance (COP)		3,20	3,20
B0/W60 (EN 14511)			
Heating output	kW	15,40	22,20
Power consumption	kW	5,90	9,30
Coefficient of performance (COP)		2,60	2,40

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++
P-rated EN 14825	kW	17	16	26	23
Efficiency ETAs	%	187	134	184	127
SCOP		4,88	3,54	4,81	3,38

1) For the scope of delivery of the passive cooling set, see page 147.
2) Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
3) Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
4) For the scope of delivery of an ESK brine collector set, see page 147.

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	**342,-**
Electric immersion heater (8.8 kW), internal	+	+	980195	**125,-**
3-way switching module, internal	+	+	980191	**237,-**
3-way switching module (DN 40), external	+	+	290341	**354,-**
Passive cooling set 3 [1]	+	-	290866	**1.622,-**
Passive cooling set 4 [1]	-	+	290867	**2.577,-**
Frost protection function for monitoring heat source temperature	+	+	980200	**96,-**
Indoor unit surface design	+	+	See page 18	

INDOOR UNIT		TERRA 18 HPLA	TERRA 27 HPLA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681
Weight	kg	230	250
Hydraulic connection	inch	1 1/2	1 1/2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50
Max. operating current	A	13	21
Fuse protection		C16A	C25A
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) [2]	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [3]	+	+	928137	**222,-**
ESK 8 brine collector set [4]	+	-	290171	**3.908,-**
ESK 14 brine collector set [4]	-	+	290734	**7.680,-**
Brine distributor	+	+	See page 119	

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- 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**
- **DELIVERY CLASS III**

UNIT TYPE		TERRA 40 HPLA	TERRA 61 HPLA	TERRA 76 HPLA
Order no.		221610	221620	221630
PRICE €		**22.170,-**	**26.151,-**	**29.488,-**
Building heat load				
Suitable building heat load	kW	34 - 40	52 - 62	64 - 78
B0/W35 (EN 14511)				
Heating output	kW	40,40	62,40	77,50
Power consumption	kW	8,60	14,30	17,60
Coefficient of performance (COP)		4,70	4,40	4,40
B0/W50 (EN 14511)				
Heating output	kW	37,50	57,60	70,70
Power consumption	kW	11,10	17,60	22,10
Coefficient of performance (COP)		3,40	3,30	3,20
B0/W60 (EN 14511)				
Heating output	kW	35,50	54,70	66,70
Power consumption	kW	13,40	20,70	26,10
Coefficient of performance (COP)		2,60	2,60	2,60

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A++	A++
P-rated EN 14825	kW	40	36	61	55	74	67
Efficiency ETAs	%	196	138	175	130	170	126
SCOP		5,09	3,65	4,58	3,45	4,46	3,36

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	TERRA 40 HPLA	TERRA 61 HPLA	TERRA 76 HPLA
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Flexible hoses, external	4 pce	4 pce	4 pce

OPTIONALLY AVAILABLE	TERRA 40 HPLA	TERRA 61 HPLA	TERRA 76 HPLA	Order no.	Price €
Electricity meter III	+	+	+	980189	**1.160,-**
Circulation pump 40-1	+	+	-	922347	**1.613,-**
Circulation pump 65-1	-	-	+	922462	**3.011,-**
3-way switching module (DN 50), external	+	+	+	290342	**377,-**
Frost protection function for monitoring heat source temperature	+	+	+	980200	**96,-**

INDOOR UNIT		TERRA 40 HPLA	TERRA 61 HPLA	TERRA 76 HPLA
Dimensions (HxWxD)	mm	1900x680x680	1900x680x680	1900x680x680
Weight	kg	228	284	306
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A	C63A	C80A
Max. operating current	A	31	50	64
Max. starting current	A	79	105,5	124
Refrigerant		R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3
Flow rate (WQA)	m³/h	9,99	15,11	18,82
Internal pressure differential (WQA)	mbar	90	120	150
Residual head (WQA)	mbar	757	595	544
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	6,90	10,70	13,30
Internal pressure differential (WNA)	mbar	40	45	50
Residual head (WNA)	mbar	650	819	748
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	TERRA 40 HPLA	TERRA 61 HPLA	TERRA 76 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	+	928137	**222,-**
ESKP 18 brine collector set [3]	+	-	-	290508	**10.369,-**
ESKP 30 brine collector set [3]	-	+	-	290510	**15.983,-**
Circulation pump 40-2	+	-	-	922348	**2.304,-**
Circulation pump 50	-	+	-	922349	**2.809,-**
Circulation pump 65-1	-	-	+	922462	**3.011,-**
Brine distributor	+	+	+	See page 119	

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- 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**
- **DELIVERY CLASS III**

UNIT TYPE		TERRA 40 CPLA	TERRA 61 CPLA	TERRA 76 CPLA
Order no.		221618	221628	221638
PRICE €		**27.443,-**	**31.210,-**	**35.838,-**
Building heat load				
Suitable building heat load	kW	34 - 40	52 - 62	64 - 78
B0/W35 (EN 14511)				
Heating output	kW	40,40	62,40	77,50
Power consumption	kW	8,60	14,30	17,60
Coefficient of performance (COP)		4,70	4,40	4,40
B0/W50 (EN 14511)				
Heating output	kW	37,50	57,60	70,70
Power consumption	kW	11,10	17,60	22,10
Coefficient of performance (COP)		3,40	3,30	3,20
B0/W60 (EN 14511)				
Heating output	kW	35,50	54,70	66,70
Power consumption	kW	13,40	20,70	26,10
Coefficient of performance (COP)		2,60	2,60	2,60
B25/W18 (EN 14511)				
Cooling capacity	kW	55,40	83,30	107,90
Power consumption	kW	9,20	14,90	19,30
Energy efficiency ratio EER		6,00	5,60	5,60
B25/W7 (EN 14511)				
Cooling capacity	kW	34,90	54,10	61,50
Power consumption	kW	8,30	12,80	14,20
Energy efficiency ratio EER		4,20	4,20	4,30

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A++	A++
P-rated EN 14825	kW	40	36	61	55	74	67
Efficiency ETAs	%	196	138	175	130	170	126
SCOP		5,09	3,65	4,58	3,45	4,46	3,36

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	TERRA 40 CPLA	TERRA 61 CPLA	TERRA 76 CPLA
Remote controller FB 6104 RH with graphic display and humidity sensor, white	1 pce	1 pce	1 pce
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Flexible hoses, external	4 pce	4 pce	4 pce

OPTIONALLY AVAILABLE	TERRA 40 CPLA	TERRA 61 CPLA	TERRA 76 CPLA	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	+	980169	**560,-**
Electricity meter III	+	+	+	980189	**1.160,-**
Circulation pump 40-1	+	+	-	922347	**1.613,-**
Circulation pump 65-1	-	-	+	922462	**3.011,-**
3-way switching module (DN 50), external	+	+	+	290342	**377,-**
Frost protection function for monitoring heat source temperature	+	+	+	980200	**96,-**

INDOOR UNIT		TERRA 40 CPLA	TERRA 61 CPLA	TERRA 76 CPLA
Dimensions (HxWxD)	mm	1900x680x680	1900x680x680	1900x680x680
Weight	kg	228	284	306
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A	C63A	C80A
Max. operating current	A	31	50	64
Max. starting current	A	79	105,5	124
Refrigerant		R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3
Flow rate (WQA)	m³/h	9,99	15,11	18,82
Internal pressure differential (WQA)	mbar	90	120	150
Residual head (WQA)	mbar	757	595	544
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	6,90	10,70	13,30
Internal pressure differential (WNA)	mbar	40	45	50
Residual head (WNA)	mbar	650	819	748
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	TERRA 40 CPLA	TERRA 61 CPLA	TERRA 76 CPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	+	928137	**222,-**
ESKP 18 brine collector set [3]	+	-	-	290508	**10.369,-**
ESKP 30 brine collector set [3]	-	+	-	290510	**15.983,-**
Circulation pump 40-2	+	-	-	922348	**2.304,-**
Circulation pump 50	-	+	-	922349	**2.809,-**
Circulation pump 65-1	-	-	+	922462	**3.011,-**
Brine distributor	+	+	+	See page 119	

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER TERRA GOLF

BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING/COOLING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS III**

UNIT TYPE		GMSW 7 HK PLUS	GMSW 10 HK PLUS
Order no.		264558	264608
PRICE €		**11.202,-**	**12.011,-**
Building heat load			
Suitable building heat load	kW	6 - 7	7 - 10
B0/W35 (EN 14511)			
Heating output	kW	7,10	10,30
Power consumption	kW	1,70	2,30
Coefficient of performance (COP)		4,30	4,60
B0/W50 (EN 14511)			
Heating output	kW	6,20	9,00
Power consumption	kW	2,10	2,90
Coefficient of performance (COP)		3,00	3,10
B0/W60 (EN 14511)			
Heating output	kW	6,10	8,30
Power consumption	kW	2,70	3,60
Coefficient of performance (COP)		2,30	2,30
B25/W18 (EN 14511)			
Cooling capacity	kW	8,20	12,20
Power consumption	kW	1,70	2,10
Energy efficiency ratio EER		4,80	5,80
B25/W7 (EN 14511)			
Cooling capacity	kW	5,20	7,10
Power consumption	kW	1,50	1,70
Energy efficiency ratio EER		3,50	4,20

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A+++	A+
P-rated EN 14825	kW	7	6	10	9
Efficiency ETAs	%	170	118	191	124
SCOP		4,45	3,15	4,97	3,29

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	GMSW 7 HK PLUS	GMSW 10 HK PLUS
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
Safety valve (WQA), external	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce
Circulation pump (WQA), internal	1 pce	1 pce
Flexible hose (1 1/4“ x 750 mm with bend), external	4 pce	4 pce
Diaphragm expansion vessel (WNA), external	1 pce	1 pce
Diaphragm expansion vessel (WQA), internal	1 pce	1 pce
Pressure gauge (WQA), external	1 pce	1 pce
Sound insulation underlay	1 pce	1 pce

OPTIONALLY AVAILABLE	GMSW 7 HK PLUS	GMSW 10 HK PLUS	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	980169	**560,-**
3-way switching module, internal (incl. additional flexible hose)	+	+	990494	**378,-**
3-way switching module (DN 32), external	+	+	290229	**291,-**
Frost protection function for monitoring heat source temperature	+	+	980200	**96,-**

INDOOR UNIT		GMSW 7 HK PLUS	GMSW 10 HK PLUS
Dimensions (HxWxD)	mm	1150x600x650	1150x600x650
Weight	kg	115	119
Hydraulic connection	inch	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50
Fuse protection		C10A	C10A
Max. operating current	A	6	8
Max. starting current	A	18,5	20,5
Refrigerant		R407C	R407C
Temperature differential (WQA)	K	3	3
Flow rate (WQA)	m³/h	1,70	2,50
Internal pressure differential (WQA)	mbar	170	214
Residual head (WQA)	mbar	637	613
Temperature differential (WNA)	K	5	5
Flow rate (WNA)	m³/h	1,20	1,70
Internal pressure differential (WNA)	mbar	90	100
Residual head (WNA)	mbar	580	501
Compressor type		Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMSW 7 HK PLUS	GMSW 10 HK PLUS	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	928137	**222,-**
ESK 4 brine collector set [3]	+	-	290167	**2.187,-**
ESK 5 brine collector set [3]	-	+	290168	**2.513,-**
Brine distributor	+	+	See page 119	

Notes:
- EHPA Quality Label not extended.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).

OCHSNER TERRA GOLF

BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING/COOLING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS III**

UNIT TYPE		GMSW 7 HK PLUS VX	GMSW 10 HK PLUS VX
Order no.		264559	264609
PRICE €		**11.202,-**	**12.011,-**
Building heat load			
Suitable building heat load	kW	6 - 7	7 - 10
B0/W35 (EN 14511)			
Heating output	kW	6,50	10,30
Power consumption	kW	1,60	2,40
Coefficient of performance (COP)		4,10	4,30
B0/W50 (EN 14511)			
Heating output	kW	5,80	8,90
Power consumption	kW	2,00	3,00
Coefficient of performance (COP)		2,90	3,00
B0/W60 (EN 14511)			
Heating output	kW	5,80	8,50
Power consumption	kW	2,60	3,80
Coefficient of performance (COP)		2,20	2,20
B25/W18 (EN 14511)			
Cooling capacity	kW	7,30	10,50
Power consumption	kW	1,50	2,10
Energy efficiency ratio EER		4,90	5,00
B25/W7 (EN 14511)			
Cooling capacity	kW	4,90	7,50
Power consumption	kW	1,40	2,00
Energy efficiency ratio EER		3,50	3,80

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A++	A+	A+++	A+
P-rated EN 14825	kW	7	6	10	9
Efficiency ETAs	%	165	115	177	119
SCOP		4,33	3,07	4,62	3,18

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	GMSW 7 HK PLUS VX	GMSW 10 HK PLUS VX
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
Safety valve (WQA), external	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce
Circulation pump (WQA), internal	1 pce	1 pce
Flexible hose (1 1/4“ x 750 mm with bend), external	4 pce	4 pce
Diaphragm expansion vessel (WNA), external	1 pce	1 pce
Diaphragm expansion vessel (WQA), internal	1 pce	1 pce
Pressure gauge (WQA), external	1 pce	1 pce
Sound insulation underlay	1 pce	1 pce

OPTIONALLY AVAILABLE	GMSW 7 HK PLUS VX	GMSW 10 HK PLUS VX	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	980169	**560,-**
3-way switching module, internal (incl. additional flexible hose)	+	+	990494	**378,-**
3-way switching module (DN 32), external	+	+	290229	**291,-**
Frost protection function for monitoring heat source temperature	+	+	980200	**96,-**

INDOOR UNIT		GMSW 7 HK PLUS VX	GMSW 10 HK PLUS VX
Dimensions (HxWxD)	mm	1150x600x650	1150x600x650
Weight	kg	115	119
Hydraulic connection	inch	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	1/220-240/50	1/220-240/50
Fuse protection		C16A	C25A
Max. operating current	A	12,7	19,1
Max. starting current	A	35	60,5
Refrigerant		R407C	R407C
Temperature differential (WQA)	K	3	3
Flow rate (WQA)	m³/h	1,50	2,30
Internal pressure differential (WQA)	mbar	150	201
Residual head (WQA)	mbar	644	622
Temperature differential (WNA)	K	5	5
Flow rate (WNA)	m³/h	1,10	1,70
Internal pressure differential (WNA)	mbar	83	100
Residual head (WNA)	mbar	589	501
Compressor type		Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMSW 7 HK PLUS VX	GMSW 10 HK PLUS VX	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	928137	**222,-**
ESK 4 brine collector set [3]	+	-	290167	**2.187,-**
ESK 5 brine collector set [3]	-	+	290168	**2.513,-**
Brine distributor	+	+	See page 119	

Notes:
- EHPA Quality Label not extended.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER TERRA GOLF

BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING/COOLING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS III**

UNIT TYPE		GMSW 12 HK PLUS	GMSW 15 HK PLUS	GMSW 17 HK PLUS
Order no.		264658	264708	264758
PRICE €		**13.281,-**	**14.090,-**	**15.245,-**
Building heat load				
Suitable building heat load	kW	10 - 12	12 - 15	15 - 17
B0/W35 (EN 14511)				
Heating output	kW	12,10	14,20	16,70
Power consumption	kW	2,70	3,20	3,60
Coefficient of performance (COP)		4,50	4,40	4,60
B0/W50 (EN 14511)				
Heating output	kW	10,50	13,00	15,20
Power consumption	kW	3,30	4,10	4,60
Coefficient of performance (COP)		3,20	3,20	3,30
B0/W60 (EN 14511)				
Heating output	kW	10,10	12,40	15,00
Power consumption	kW	4,00	4,90	5,80
Coefficient of performance (COP)		2,50	2,50	2,60
B25/W18 (EN 14511)				
Cooling capacity	kW	14,00	17,40	20,20
Power consumption	kW	2,50	3,10	3,50
Energy efficiency ratio EER		5,60	5,60	5,80
B25/W7 (EN 14511)				
Cooling capacity	kW	9,20	9,80	13,20
Power consumption	kW	2,30	2,50	3,20
Energy efficiency ratio EER		4,00	3,90	4,10

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A+++	A++
P-rated EN 14825	kW	12	10	14	13	17	15
Efficiency ETAs	%	184	128	182	129	192	134
SCOP		4,79	3,41	4,76	3,43	5,01	3,56

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	GMSW 12 HK PLUS	GMSW 15 HK PLUS	GMSW 17 HK PLUS
Remote controller FB 6104 RH with graphic display and humidity sensor, white	1 pce	1 pce	1 pce
Diaphragm expansion vessel	1 pce	-	-
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Safety valve (WQA), external	1 pce	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce	1 pce
Circulation pump (WQA), internal	1 pce	1 pce	1 pce
Flexible hose (1 1/4“ x 750 mm with bend), external	4 pce	4 pce	-
Flexible hose (1 1/2“ x 750 mm with bend), external	-	-	4 pce
Diaphragm expansion vessel (WNA), external	1 pce	1 pce	1 pce
Diaphragm expansion vessel (WQA), internal	1 pce	1 pce	1 pce
Pressure gauge (WQA), external	1 pce	1 pce	1 pce
Sound insulation underlay	1 pce	1 pce	1 pce

OPTIONALLY AVAILABLE	GMSW 12 HK PLUS	GMSW 15 HK PLUS	GMSW 17 HK PLUS	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	+	980169	**560,-**
3-way switching module (DN 32), external	+	+	-	290229	**291,-**
3-way switching module (DN 40), external	-	-	+	290341	**354,-**
Frost protection function for monitoring heat source temperature	+	+	+	980200	**96,-**

INDOOR UNIT		GMSW 12 HK PLUS	GMSW 15 HK PLUS	GMSW 17 HK PLUS
Dimensions (HxWxD)	mm	1150x600x650	1150x600x650	1150x600x650
Weight	kg	132	138	142
Hydraulic connection	inch	1 1/4	1 1/4	1 1/2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C13A	C16A	C16A
Max. operating current	A	9	11	12
Max. starting current	A	27,5	33,5	35
Refrigerant		R407C	R407C	R407C
Temperature differential (WQA)	K	3	3	3
Flow rate (WQA)	m³/h	2,90	3,50	4,00
Internal pressure differential (WQA)	mbar	180	210	190
Residual head (WQA)	mbar	582	940	1022
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	2,10	2,50	2,90
Internal pressure differential (WNA)	mbar	90	100	100
Residual head (WNA)	mbar	406	288	266
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMSW 12 HK PLUS	GMSW 15 HK PLUS	GMSW 17 HK PLUS	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	+	928137	**222,-**
ESK 6 brine collector set [3]	+	-	-	290169	**2.906,-**
ESK 7 brine collector set [3]	-	+	-	290170	**3.395,-**
ESK 8 brine collector set [3]	-	-	+	290171	**3.908,-**
Brine distributor	+	+	+	See page 119	

Notes:
- EHPA Quality Label not extended.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER TERRA GOLF

BRINE/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING/COOLING**
- **MAX. FLOW TEMP.: 55°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS III**

UNIT TYPE		GMSW 28 HK	GMSW 38 HK
Order no.		264358	264458
PRICE €		**16.169,-**	**19.056,-**
Building heat load			
Suitable building heat load	kW	17 - 24	24 - 30
B0/W35 (EN 14511)			
Heating output	kW	22,20	28,70
Power consumption	kW	5,10	6,50
Coefficient of performance (COP)		4,30	4,40
B0/W50 (EN 14511)			
Heating output	kW	18,30	25,60
Power consumption	kW	6,10	8,50
Coefficient of performance (COP)		3,00	3,00
B25/W18 (EN 14511)			
Cooling capacity	kW	27,30	37,40
Power consumption	kW	4,90	6,60
Energy efficiency ratio EER		5,60	5,70
B25/W7 (EN 14511)			
Cooling capacity	kW	16,10	22,00
Power consumption	kW	4,00	5,40
Energy efficiency ratio EER		4,00	4,10

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++
P-rated EN 14825	kW	22	20	29	25
Efficiency ETAs	%	182	139	184	142
SCOP		4,76	3,66	4,79	3,74

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] Propylene glycol based frost protection concentrate O-Cool-Pro with environmentally friendly corrosion inhibitors (25 kg canister): 32% concentration, freezing point -14°C
[3] For the scope of delivery of an ESK brine collector set, see page 147.

INCLUDED AS STANDARD	GMSW 28 HK	GMSW 38 HK
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 (1 1/2" x 750 mm with bend), external	4 pce	-
Flexible hose (2" x 1000 mm with bend), external	-	4 pce
Sound insulation underlay	1 pce	1 pce

OPTIONALLY AVAILABLE	GMSW 28 HK	GMSW 38 HK	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	980169	**560,-**
3-way switching module (DN 40), external	+	-	290341	**354,-**
3-way switching module (DN 50), external	-	+	290342	**377,-**
Circulation pump 30	+	+	922461	**1.418,-**
Frost protection function for monitoring heat source temperature	+	+	980200	**96,-**

INDOOR UNIT		GMSW 28 HK	GMSW 38 HK
Dimensions (HxWxD)	mm	1150x600x650	1150x600x650
Weight	kg	161	174
Hydraulic connection	inch	1 1/2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50
Fuse protection		C20A	C25A
Max. operating current	A	17	22
Max. starting current	A	49,5	63,5
Refrigerant		R407C	R407C
Temperature differential (WQA)	K	3	3
Flow rate (WQA)	m³/h	4,60	6,70
Internal pressure differential (WQA)	mbar	240	370
Residual head (WQA)	mbar	973	782
Temperature differential (WNA)	K	5	5
Flow rate (WNA)	m³/h	3,40	5,00
Internal pressure differential (WNA)	mbar	120	190
Residual head (WNA)	mbar	904	766
Compressor type		Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMSW 28 HK	GMSW 38 HK	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	928137	**222,-**
ESKP 10 brine collector set [3]	+	-	290504	**6.233,-**
ESKP 14 brine collector set [3]	-	+	290506	**8.831,-**
Circulation pump 30	+	+	922461	**1.418,-**
Brine distributor	+	+	See page 119	

Notes:
- EHPA Quality Label not extended.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 146).
- 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

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

UNIT TYPE		TERRA MULTI DUO 101 HPLA	TERRA MULTI DUO 122 HPLA	TERRA MULTI DUO 137 HPLA	TERRA MULTI DUO 152 HPLA
Order no.		290843	290844	290845	290846
PRICE €		**43.489,-**	**47.072,-**	**50.076,-**	**53.079,-**
B0/W35 (EN 14511)					
Heating output	kW	40,4 - 102,8	62,4 - 124,8	62,4 - 139,9	77,5 - 155
Power consumption	kW	8,6 - 22,9	14,3 - 28,6	14,3 - 31,9	17,6 - 35,2
Coefficient of performance (COP)		4,6	4,4	4,4	4,4
B0/W50 (EN 14511)					
Heating output	kW	37,5 - 95,1	57,6 - 115,2	57,6 - 128,3	70,7 - 141,4
Power consumption	kW	11,1 - 28,7	17,6 - 35,2	17,6 - 39,7	22,1 - 44,2
Coefficient of performance (COP)		3,4	3,3	3,3	3,2
B0/W60 (EN 14511)					
Heating output	kW	35,5 - 90,2	54,7 - 109,4	54,7 - 121,4	66,7 - 133,4
Power consumption	kW	13,4 - 34,1	20,7 - 41,4	20,7 - 46,8	26,1 - 52,2
Coefficient of performance (COP)		2,6	2,6	2,6	2,6

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] 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 101 HPLA	TERRA MULTI DUO 122 HPLA	TERRA MULTI DUO 137 HPLA	TERRA MULTI DUO 152 HPLA
Flow meter (WNA), external	2 pce	2 pce	2 pce	2 pce
Flow meter (WQA), external	2 pce	2 pce	2 pce	2 pce
Flexible hoses, external	8 pce	8 pce	8 pce	8 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	TERRA MULTI DUO 101 HPLA	TERRA MULTI DUO 122 HPLA	TERRA MULTI DUO 137 HPLA	TERRA MULTI DUO 152 HPLA	Order no.	Price €
Electricity meter III	2 pce	2 pce	2 pce	2 pce	980189	**1.160,-**
Circulation pump 40-1	2 pce	2 pce	1 pce	-	922347	**1.613,-**
Circulation pump 65-1	-	-	+	+	922462	**3.011,-**
Frost protection function for monitoring heat source temperature	2 pce	2 pce	2 pce	2 pce	980200	**96,-**

INDOOR UNIT		TERRA MULTI DUO 101 HPLA	TERRA MULTI DUO 122 HPLA	TERRA MULTI DUO 137 HPLA	TERRA MULTI DUO 152 HPLA
Dimensions (HxWxD)	mm	1900x2160x680	1900x2160x680	1900x2160x680	1900x2160x680
Weight	kg	512	568	590	612
Hydraulic connection	inch	2	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50	3/400/50
Fuse protection		C40A / C63A	C63A / C63A	C63A / C80A	C80A / C80A
Max. operating current	A	31 / 50	50 / 50	50 / 64	64 / 64
Max. starting current	A	79 / 105,5	105,5 / 105,5	105,5 / 124	124 / 124
Refrigerant		R410A	R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3	3
Flow rate (WQA)	m³/h	9,99 - 25,1	15,11 - 30,22	15,11 - 33,93	18,82 - 37,64
Internal pressure differential (WQA)	mbar	90 / 120	120 / 120	120 / 150	150 / 150
Residual head (WQA)	mbar	757 / 595	595 / 595	595 / 544	544 / 544
Temperature differential (WNA)	K	5	5	5	5
Flow rate (WNA)	m³/h	6,9 - 17,6	10,7 - 21,4	10,7 - 24	13,3 - 26,6
Internal pressure differential (WNA)	mbar	40 / 45	45 / 45	45 / 50	50 / 50
Residual head (WNA)	mbar	650 / 819	819 / 819	819 / 748	748 / 748
Compressor type		Scroll	Scroll	Scroll	Scroll
Number of compressors	pce	2	2	2	2

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	TERRA MULTI DUO 101 HPLA	TERRA MULTI DUO 122 HPLA	TERRA MULTI DUO 137 HPLA	TERRA MULTI DUO 152 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1)]	+	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2)]	+	+	+	+	928137	**222,-**
Circulation pump 40-2	1 pce	-	-	-	922348	**2.304,-**
Circulation pump 50	1 pce	2 pce	1 pce	-	922349	**2.809,-**
Circulation pump 65-1	-	-	+	+	922462	**3.011,-**

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 section Engineering, page 158).

OCHSNER TERRA MULTI M6

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

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

UNIT TYPE		TERRA MULTI TRIO 177 HPLA	TERRA MULTI TRIO 198 HPLA	TERRA MULTI TRIO 228 HPLA
Order no.		290847	290848	290849
PRICE €		**70.029,-**	**73.611,-**	**79.618,-**
B0/W35 (EN 14511)				
Heating output	kW	40,4 - 180,3	62,4 - 202,3	77,5 - 232,5
Power consumption	kW	8,6 - 40,5	14,3 - 46,2	17,6 - 52,8
Coefficient of performance (COP)		4,5	4,4	4,4
B0/W50 (EN 14511)				
Heating output	kW	37,5 - 165,8	57,6 - 185,9	70,7 - 212,1
Power consumption	kW	11,1 - 50,8	17,6 - 57,3	22,1 - 66,3
Coefficient of performance (COP)		3,3	3,3	3,2
B0/W60 (EN 14511)				
Heating output	kW	35,5 - 156,9	54,7 - 176,1	66,7 - 200,1
Power consumption	kW	13,4 - 60,2	20,7 - 67,5	26,1 - 78,3
Coefficient of performance (COP)		2,6	2,6	2,6

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] 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 TRIO 177 HPLA	TERRA MULTI TRIO 198 HPLA	TERRA MULTI TRIO 228 HPLA
Flow meter (WNA), external		3 pce	3 pce	3 pce
Flow meter (WQA), external		3 pce	3 pce	3 pce
Flexible hoses, external		12 pce	12 pce	12 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	TERRA MULTI TRIO 177 HPLA	TERRA MULTI TRIO 198 HPLA	TERRA MULTI TRIO 228 HPLA	Order no.	Price €
Electricity meter III	3 pce	3 pce	3 pce	980189	**1.160,-**
Circulation pump 40-1	2 pce	2 pce	-	922347	**1.613,-**
Circulation pump 65-1	+	+	+	922462	**3.011,-**
Frost protection function for monitoring heat source temperature	3 pce	3 pce	3 pce	980200	**96,-**

INDOOR UNIT		TERRA MULTI TRIO 177 HPLA	TERRA MULTI TRIO 198 HPLA	TERRA MULTI TRIO 228 HPLA
Dimensions (HxWxD)	mm	1900x3640x680	1900x3640x680	1900x3640x680
Weight	kg	818	874	918
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A / C63A / C80A	C63A / C63A / C80A	C80A / C80A / C80A
Max. operating current	A	31 / 50 / 64	50 / 50 / 64	64 / 64 / 64
Max. starting current	A	79 / 105,5 / 124	105,5 / 105,5 / 124	124 / 124 / 124
Refrigerant		R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3
Flow rate (WQA)	m³/h	9,99 - 43,92	15,11 - 49,04	18,82 - 56,46
Internal pressure differential (WQA)	mbar	90 / 120 / 150	120 / 120 / 150	150 / 150 / 150
Residual head (WQA)	mbar	757 / 595 / 544	595 / 595 / 544	544 / 544 / 544
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	6,9 - 30,9	10,7 - 34,7	13,3 - 39,9
Internal pressure differential (WNA)	mbar	40 / 45 / 50	45 / 45 / 50	50 / 50 / 50
Residual head (WNA)	mbar	650 / 819 / 748	819 / 819 / 748	748 / 748 / 748
Compressor type		Scroll	Scroll	Scroll
Number of compressors	pce	3	3	3

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	TERRA MULTI TRIO 177 HPLA	TERRA MULTI TRIO 198 HPLA	TERRA MULTI TRIO 228 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1]	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2]	+	+	+	928137	**222,-**
Circulation pump 40-2	1 pce	-	-	922348	**2.304,-**
Circulation pump 50	1 pce	2 pce	-	922349	**2.809,-**
Circulation pump 65-1	+	+	+	922462	**3.011,-**

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 section Engineering, page 158).

OCHSNER TERRA MULTI M6

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

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

UNIT TYPE		TERRA MULTI QUATTRO 244 HPLA	TERRA MULTI QUATTRO 274 HPLA	TERRA MULTI QUATTRO 304 HPLA
Order no.		290850	290851	290852
PRICE €		**94.145,-**	**100.151,-**	**106.157,-**
B0/W35 (EN 14511)				
Heating output	kW	62,4 - 249,6	62,4 - 279,8	77,5 - 310
Power consumption	kW	14,3 - 57,2	14,3 - 63,8	17,6 - 70,4
Coefficient of performance (COP)		4,4	4,4	4,4
B0/W50 (EN 14511)				
Heating output	kW	57,6 - 230,4	57,6 - 256,6	70,7 - 282,8
Power consumption	kW	17,6 - 70,4	17,6 - 79,4	22,1 - 88,4
Coefficient of performance (COP)		3,3	3,3	3,2
B0/W60 (EN 14511)				
Heating output	kW	54,7 - 218,8	54,7 - 242,8	66,7 - 266,8
Power consumption	kW	20,7 - 82,8	20,7 - 93,6	26,1 - 104,4
Coefficient of performance (COP)		2,6	2,6	2,6

[1] Ethylene glycol-based frost protection concentrate (25 kg canister): 25% concentration, freezing point -14°C (recommended for all models due to improved viscosity)
[2] 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 QUATTRO 244 HPLA	TERRA MULTI QUATTRO 274 HPLA	TERRA MULTI QUATTRO 304 HPLA
Flow meter (WNA), external	4 pce	4 pce	4 pce
Flow meter (WQA), external	4 pce	4 pce	4 pce
Flexible hoses, external	16 pce	16 pce	16 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	TERRA MULTI QUATTRO 244 HPLA	TERRA MULTI QUATTRO 274 HPLA	TERRA MULTI QUATTRO 304 HPLA	Order no.	Price €
Electricity meter III	4 pce	4 pce	4 pce	980189	**1.160,-**
Circulation pump 40-1	4 pce	2 pce	-	922347	**1.613,-**
Circulation pump 65-1	-	+	+	922462	**3.011,-**
Frost protection function for monitoring heat source temperature	4 pce	4 pce	4 pce	980200	**96,-**

INDOOR UNIT		TERRA MULTI QUATTRO 244 HPLA	TERRA MULTI QUATTRO 274 HPLA	TERRA MULTI QUATTRO 304 HPLA
Dimensions (HxWxD)	mm	1900x5120x680	1900x5120x680	1900x5120x680
Weight	kg	1136	1180	1224
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C63A / C63A / C63A / C63A	C63A / C63A / C80A / C80A	C80A / C80A / C80A / C80A
Max. operating current	A	50 / 50 / 50 / 50	50 / 50 / 64 / 64	64 / 64 / 64 / 64
Max. starting current	A	105,5 / 105,5 / 105,5 / 105,5	105,5 / 105,5 / 124 / 124	124 / 124 / 124 / 124
Refrigerant		R410A	R410A	R410A
Temperature differential (WQA)	K	3	3	3
Flow rate (WQA)	m³/h	15,11 - 60,44	15,11 - 67,86	18,82 - 75,28
Internal pressure differential (WQA)	mbar	120 / 120 / 120 / 120	120 / 120 / 150 / 150	150 / 150 / 150 / 150
Residual head (WQA)	mbar	595 / 595 / 595 / 595	595 / 595 / 544 / 544	544 / 544 / 544 / 544
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	10,7 - 42,8	10,7 - 48	13,3 - 53,2
Internal pressure differential (WNA)	mbar	45 / 45 / 45 / 45	45 / 45 / 50 / 50	50 / 50 / 50 / 50
Residual head (WNA)	mbar	819 / 819 / 819 / 819	819 / 819 / 748 / 748	748 / 748 / 748 / 748
Compressor type		Scroll	Scroll	Scroll
Number of compressors	pce	4	4	4

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	TERRA MULTI QUATTRO 244 HPLA	TERRA MULTI QUATTRO 274 HPLA	TERRA MULTI QUATTRO 304 HPLA	Order no.	Price €
Ethylene glycol-based frost protection concentrate (25 kg) [1)]	+	+	+	928153	**130,-**
Antifreeze concentrate O-Cool-Pro (25 kg) [2)]	+	+	+	928137	**222,-**
Circulation pump 50	4 pce	2 pce	-	922349	**2.809,-**
Circulation pump 65-1	-	+	+	922462	**3.011,-**

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 section Engineering, page 158).

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	■	■
WITH THE FOLLOWING FUNCTION AND CHARACTERISTIC		
Heating	■	■
Master/slave cascade possible	■	■
DHW HEATING		
DHW heating possible	■	■
DHW heating possible > 60°C	■	■
APPLIANCE POSITIONING		
Indoor installation	■	■

Suitable building heat load in kW [1)]

	2	4	6	8	10	12	14	16	18	20	See page
TERRA DX 5		■									76
TERRA DX 8			■	■							76
TERRA DX 11					■	■					76
TERRA DX 13						■	■				78
TERRA DX 15							■	■			78
TERRA DX 18								■	■	■	78

■ available

[1)] 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**
- **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 €		**7.404,-**	**8.501,-**	**9.147,-**	**10.094,-**
Building heat load					
Suitable building heat load	kW	4 - 6	6 - 9	9 - 12	12 - 14
G4/W35 (EN 14511)					
Heating output	kW	6,20	8,60	12,10	14,20
Power consumption	kW	1,30	1,70	2,35	2,80
Coefficient of performance (COP)		4,80	5,10	5,10	5,10
G-1/W35 (EN 14511)					
Heating output	kW	5,20	6,80	10,10	11,30
Power consumption	kW	1,30	1,70	2,25	2,70
Coefficient of performance (COP)		4,10	4,20	4,60	4,40
G0/W50 (EN 14511)					
Heating output	kW	4,90	6,20	9,00	10,30
Power consumption	kW	1,70	2,10	3,00	3,30
Coefficient of performance (COP)		2,90	3,00	3,00	3,10
G0/W60 (EN 14511)					
Heating output	kW	4,70	6,00	8,90	10,20
Power consumption	kW	2,20	2,70	3,80	4,10
Coefficient of performance (COP)		2,10	2,20	2,30	2,50

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A++	A+++	A++	A+++	A++
P-rated EN 14825	kW	6	6	9	7	12	11	14	12
Efficiency ETAs	%	197	131	208	141	216	143	209	147
SCOP		5,13	3,47	5,41	3,10	5,59	3,78	5,42	3,88

[1] 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.
[2] Each incl. nitrogen charge with leakage indicator. For the recommended quantity, see page 160.

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	**342,-**
Electric immersion heater (8.8 kW), internal	+	+	+	+	980204	**125,-**
3-way switching module, internal [1]	+	+	+	+	980205	**237,-**
3-way switching module (DN 32), external	+	+	+	+	290229	**291,-**
Indoor unit surface design	+	+	+	+	See page 18	

INDOOR UNIT		TERRA DX 5 HCUA	TERRA DX 8 HCUA	TERRA DX 11 HCUA	TERRA DX 13 HCUA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681	1285x600x681
Weight	kg	185	190	190	200
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50	3/400/50
Fuse protection		C10A	C10A	C10A	C10A
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) [2]	+	+	+	+	913209	**407,-**
Warning band roll (250 m)	+	+	+	+	916363	**23,-**
Suction equipment for internal refrigerant circuit	+	+	+	+	990188	**296,-**

5 m connection line (for systems with collection shaft)	Order no.	Price €
Connection line set TERRA DX 5 (5 m)	290763	**195,-**
Connection line set TERRA DX 8 (5 m)	290767	**210,-**
Connection line set TERRA DX 11 (5 m)	290771	**250,-**
Connection line set TERRA DX 13 (5 m)	290775	**349,-**

10 m connection line (for systems with collection shaft)	Order no.	Price €
Connection line set TERRA DX 5 (10 m)	290764	**368,-**
Connection line set TERRA DX 8 (10 m)	290768	**396,-**
Connection line set TERRA DX 11 (10 m)	290772	**471,-**
Connection line set TERRA DX 13 (10 m)	290776	**659,-**

15 m connection line (for systems with collection shaft)	Order no.	Price €
Connection line set TERRA DX 5 (15 m)	290765	**730,-**
Connection line set TERRA DX 8 (15 m)	290769	**776,-**
Connection line set TERRA DX 11 (15 m)	290773	**776,-**
Connection line set TERRA DX 13 (15 m)	290777	**1.086,-**

20 m connection line (for systems with collection shaft)	Order no.	Price €
Connection line set TERRA DX 5 (20 m)	290766	**964,-**
Connection line set TERRA DX 8 (20 m)	290770	**1.026,-**
Connection line set TERRA DX 11 (20 m)	290774	**1.026,-**
Connection line set TERRA DX 13 (20 m)	290778	**1.435,-**

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 section Engineering, page 160).
- 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**
- **DELIVERY CLASS II**

UNIT TYPE		TERRA DX 15 HCUA	TERRA DX 18 HCUA
Order no.		277050	277060
PRICE €		**11.084,-**	**12.591,-**
Building heat load			
Suitable building heat load	kW	14 - 16	16 - 20
G4/W35 (EN 14511)			
Heating output	kW	16,00	20,80
Power consumption	kW	3,15	4,00
Coefficient of performance (COP)		5,10	5,20
G-1/W35 (EN 14511)			
Heating output	kW	14,00	16,30
Power consumption	kW	3,15	3,90
Coefficient of performance (COP)		4,40	4,40
G0/W50 (EN 14511)			
Heating output	kW	13,10	15,40
Power consumption	kW	4,10	4,80
Coefficient of performance (COP)		3,20	3,20
G0/W60 (EN 14511)			
Heating output	kW	12,80	15,10
Power consumption	kW	5,10	6,20
Coefficient of performance (COP)		2,50	2,40

ENERGY EFFICIENCY CLASS					
at max. flow temperature	°C	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A+++
P-rated EN 14825	kW	16	15	21	18
Efficiency ETAs	%	211	147	216	152
SCOP		5,49	3,89	5,60	4,00

[1] Each incl. nitrogen charge with leakage indicator. For the recommended quantity, see page 160.

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	**342,-**
Electric immersion heater (8.8 kW), internal	+	+	980195	**125,-**
3-way switching module, internal	+	+	980191	**237,-**
3-way switching module (DN 40), external	+	+	290341	**354,-**
Indoor unit surface design	+	+	See page 18	

INDOOR UNIT		TERRA DX 15 HCUA	TERRA DX 18 HCUA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681
Weight	kg	210	210
Hydraulic connection	inch	1 1/2	1 1/2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50
Fuse protection		C13A	C16A
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) [1]	+	+	913209	**407,-**
Warning band roll (250 m)	+	+	916363	**23,-**
Suction equipment for internal refrigerant circuit	+	+	990188	**296,-**

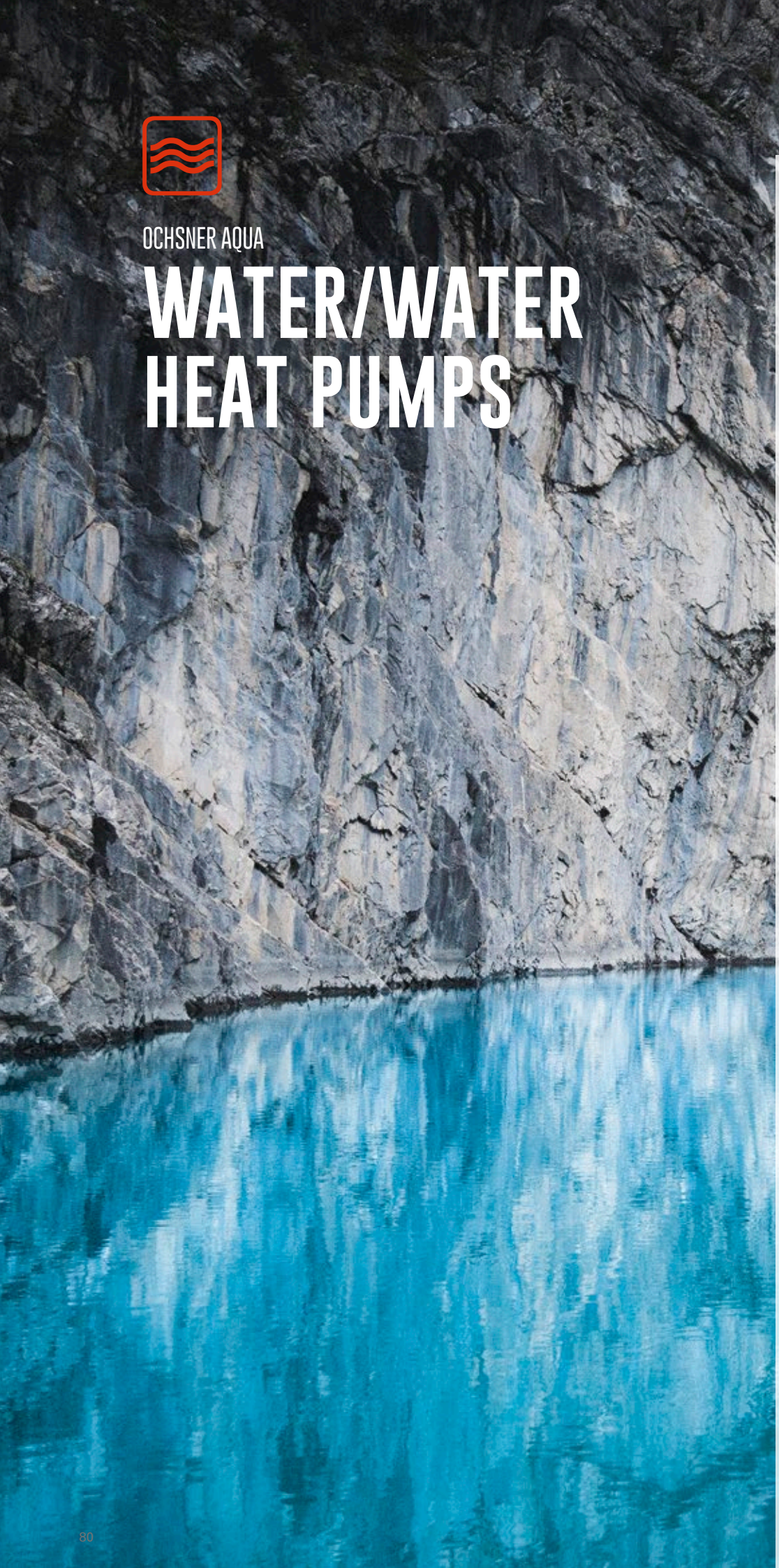
5 m connection line (for systems with collection shaft)	**Order no.**	**Price €**
Connection line set TERRA DX 15 (5 m)	290779	**349,-**
Connection line set TERRA DX 18 (5 m)	290783	**375,-**

10 m connection line (for systems with collection shaft)	**Order no.**	**Price €**
Connection line set TERRA DX 15 (10 m)	290780	**659,-**
Connection line set TERRA DX 18 (10 m)	290784	**707,-**

15 m connection line (for systems with collection shaft)	**Order no.**	**Price €**
Connection line set TERRA DX 15 (15 m)	290781	**1.164,-**
Connection line set TERRA DX 18 (15 m)	290785	**1.164,-**

20 m connection line (for systems with collection shaft)	**Order no.**	**Price €**
Connection line set TERRA DX 15 (20 m)	290782	**1.538,-**
Connection line set TERRA DX 18 (20 m)	290786	**1.538,-**

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 section Engineering, page 160).
- 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
WITH THE FOLLOWING FUNCTION AND CHARACTERISTIC
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 83 HPLA AQUA 97 HPLA	AQUA 54 CPLA AQUA 83 CPLA AQUA 97 CPLA	GMWW 7 PLUS GMWW 11 PLUS (VX) GMWW 14 PLUS (VX)	GMWW 17 PLUS (VX) GMWW 22 PLUS GMWW 36 PLUS
■	■			■	■
	■	■	■		■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
			■		
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■

Suitable building heat load in kW [1)]

	4	6	8	10	12	14	16	18	20	22	–	28	–	36	–	46	–	54	–	70	–	85	–	100	See page
AQUA 7		■																							82
AQUA 11			■	■																					82
AQUA 14					■																				82
AQUA 17					■	■	■																		84
AQUA 22								■	■	■															86
AQUA 36												■	■												86
AQUA 54																■	■								88
AQUA 83																				■	■				88
AQUA 97																						■	■		88
GMWW 7 plus		■																							92
GMWW 11 plus (VX)			■	■																					92
GMWW 14 plus (VX)					■																				92
GMWW 17 plus (VX)						■	■	■																	94
GMWW 22 plus									■	■	■														96
GMWW 36 plus												■	■												96

AQUA MULTI: Cascade packages

For heating outputs up to 395 kW, cascade packages are available. See page: 98

■ available

[1)] 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**
- **DELIVERY CLASS II**
- **AVAILABLE FROM 4TH QUARTER**

UNIT TYPE		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA
Order no.		255010V	255020V	255030V
PRICE €		**9.449,-**	**10.700,-**	**12.074,-**
Building heat load				
Suitable building heat load	kW	6 - 7	7 - 10	10 - 12
W10/W35 (EN 14511)				
Heating output	kW	6,70	10,00	12,30
Power consumption	kW	1,33	1,70	2,10
Coefficient of performance (COP)		5,10	5,70	5,80
W10/W50 (EN 14511)				
Heating output	kW	6,40	8,30	11,60
Power consumption	kW	1,84	2,30	3,00
Coefficient of performance (COP)		3,50	3,60	3,90
W10/W60 (EN 14511)				
Heating output	kW	6,20	7,90	10,90
Power consumption	kW	2,30	2,90	3,70
Coefficient of performance (COP)		2,70	2,70	2,90

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	7	6	10	8	12	11
Efficiency ETAs	%	209	141	250	153	249	161
SCOP		5,42	3,73	6,44	4,03	6,43	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] 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	**342,-**
Electric immersion heater (8.8 kW), internal	+	+	+	991568	**125,-**
3-way switching module, internal	+	+	+	991569	**237,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	+	920654	**273,-**
Passive cooling set 1 [1]	+	+	+	290864	**1.389,-**
Indoor unit surface design	+	+	+	See page 18	

INDOOR UNIT		AQUA 7 HSTA	AQUA 11 HSTA	AQUA 14 HSTA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681
Weight	kg	160	180	185
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C6A	C10A	C10A
Max. operating current	A	4,8	6,2	7,4
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	1,60	1,85	2,20
Internal pressure differential (WQA)	mbar	59	76	96
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	1,20	1,85	2,20
Internal pressure differential (WNA), M2-1/M4-1	mbar	108	170	182
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 [2]	+	+	+	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source I	+	+	+	922484	**139,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	+	922234	**1.934,-**

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- 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**
- **DELIVERY CLASS II**
- **AVAILABLE FROM 4TH QUARTER**

UNIT TYPE		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB
Order no.		255022V	255032V	255042V
PRICE €		**10.700,-**	**12.074,-**	**13.124,-**
Building heat load				
Suitable building heat load	kW	7 - 10	10 - 12	12 - 17
W10/W35 (EN 14511)				
Heating output	kW	10,00	12,30	16,60
Power consumption	kW	1,70	2,10	2,80
Coefficient of performance (COP)		5,70	5,80	5,90
W10/W50 (EN 14511)				
Heating output	kW	8,30	11,60	14,80
Power consumption	kW	2,30	3,00	3,80
Coefficient of performance (COP)		3,60	3,90	3,90
W10/W60 (EN 14511)				
Heating output	kW	7,90	10,90	13,80
Power consumption	kW	2,90	3,70	4,80
Coefficient of performance (COP)		2,70	2,90	2,90

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	10	8	12	11	17	14
Efficiency ETAs	%	250	153	249	161	253	162
SCOP		6,44	4,03	6,43	4,24	6,52	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] 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 €
Electric immersion heater (8.8 kW), internal	+	+	+	991568	**125,-**
3-way switching module, internal	+	+	+	991569	**237,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	+	920654	**273,-**
Passive cooling set 1 [1]	+	+	-	290864	**1.389,-**
Passive cooling set 2 [1]	-	-	+	290865	**1.553,-**
Indoor unit surface design	+	+	+	See page 18	

INDOOR UNIT		AQUA 11 HSTB	AQUA 14 HSTB	AQUA 17 HSTB
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681
Weight	kg	180	185	195
Hydraulic connection	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		C25A	C25A	C32A
Max. operating current	A	17,1	22,8	27,9
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	1,85	2,20	3,00
Internal pressure differential (WQA)	mbar	76	96	176
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	1,85	2,20	2,85
Internal pressure differential (WNA), M2-1/M4-1	mbar	170	182	262
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 [2]	+	+	+	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source I	+	+	-	922484	**139,-**
Filter for heat source II	-	-	+	922485	**301,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	+	922234	**1.934,-**

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- 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**
- **DELIVERY CLASS II**
- **AVAILABLE FROM 4TH QUARTER**

UNIT TYPE		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA
Order no.		255040V	255050V	255060V
PRICE €		**13.124,-**	**14.174,-**	**16.274,-**
Building heat load				
Suitable building heat load	kW	12 - 17	17 - 22	28 - 36
W10/W35 (EN 14511)				
Heating output	kW	16,60	22,10	35,30
Power consumption	kW	2,80	3,70	6,20
Coefficient of performance (COP)		5,90	5,90	5,70
W10/W50 (EN 14511)				
Heating output	kW	14,80	19,70	30,90
Power consumption	kW	3,80	5,10	7,80
Coefficient of performance (COP)		3,90	3,90	4,00
W10/W60 (EN 14511)				
Heating output	kW	13,80	18,50	29,60
Power consumption	kW	4,80	6,40	9,90
Coefficient of performance (COP)		2,90	2,90	3,00

ENERGY EFFICIENCY CLASS							
at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	17	14	22	19	35	30
Efficiency ETAs	%	253	162	256	162	235	162
SCOP		6,52	4,24	6,61	4,26	6,08	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] 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	**342,-**
Electric immersion heater (8.8 kW), internal	+	+	+	991568	**125,-**
3-way switching module, internal	+	+	+	991569	**237,-**
3-way switching module (DN 32), external	+	+	-	290229	**291,-**
3-way switching module (DN 40), external	-	-	+	290341	**354,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	-	920654	**273,-**
Passive cooling set 2 [1]	+	-	-	290865	**1.553,-**
Passive cooling set 3 [1]	-	+	-	290866	**1.622,-**
Passive cooling set 4 [1]	-	-	+	290867	**2.577,-**
Indoor unit surface design	+	+	+	See page 18	

INDOOR UNIT		AQUA 17 HSTA	AQUA 22 HSTA	AQUA 36 HPLA
Dimensions (HxWxD)	mm	1285x600x681	1285x600x681	1285x600x681
Weight	kg	195	210	225
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C13A	C16A	C25A
Max. operating current	A	9,7	13	21
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	4
Flow rate (WQA)	m³/h	3,00	3,90	6,20
Internal pressure differential (WQA)	mbar	176	276	234
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	2,85	3,80	6,10
Internal pressure differential (WNA), M2-1/M4-1	mbar	262	460	603
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 [2]	+	+	-	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source II	+	+	-	922485	**301,-**
Filter for heat source III	-	-	+	922486	**594,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	-	922234	**1.934,-**
Centrifugal filter for larger quantities of impurities II [3]	-	-	+	922235	**2.352,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- 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**
- **DELIVERY CLASS III**

UNIT TYPE		AQUA 54 HPLA	AQUA 83 HPLA	AQUA 97 HPLA
Order no.		222610	222620	222630
PRICE €		**22.170,-**	**26.582,-**	**30.134,-**
Building heat load				
Suitable building heat load	kW	46 - 54	70 - 85	84 - 99
W10/W35 (EN 14511)				
Heating output	kW	53,90	84,50	98,80
Power consumption	kW	9,30	15,90	19,00
Coefficient of performance (COP)		5,80	5,30	5,20
W10/W50 (EN 14511)				
Heating output	kW	49,70	76,20	89,40
Power consumption	kW	11,80	19,10	22,30
Coefficient of performance (COP)		4,20	4,00	4,00
W10/W60 (EN 14511)				
Heating output	kW	46,50	71,20	83,70
Power consumption	kW	14,20	22,00	26,10
Coefficient of performance (COP)		3,30	3,20	3,20

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	54	48	85	74	99	87
Efficiency ETAs	%	243	173	219	164	213	162
SCOP		6,26	4,52	5,67	4,29	5,53	4,25

[1] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[2] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	AQUA 54 HPLA	AQUA 83 HPLA	AQUA 97 HPLA
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Flexible hose (2“ x 1000 mm with bend), external	4 pce	4 pce	4 pce

OPTIONALLY AVAILABLE	AQUA 54 HPLA	AQUA 83 HPLA	AQUA 97 HPLA	Order no.	Price €
Electricity meter III	+	+	+	980189	**1.160,-**
Circulation pump 40-1	+	-	-	922347	**1.613,-**
Circulation pump 65-1	-	+	+	922462	**3.011,-**
3-way switching module (DN 50), external	+	+	+	290342	**377,-**

INDOOR UNIT		AQUA 54 HPLA	AQUA 83 HPLA	AQUA 97 HPLA
Dimensions (HxWxD)	mm	1900x680x680	1900x680x680	1900x680x680
Weight	kg	228	284	306
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A	C63A	C80A
Max. operating current	A	31	50	64
Max. starting current	A	79	105,5	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	9,60	14,70	17,10
Internal pressure differential (WQA)	mbar	60	75	81
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	9,20	14,50	16,90
Internal pressure differential (WNA)	mbar	60	70	75
Residual head (WNA)	mbar	499	672	602
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	AQUA 54 HPLA	AQUA 83 HPLA	AQUA 97 HPLA	Order no.	Price €
Submersible pump V, speed controlled [1]	+	+	+	290608	**4.910,-**
Cooling enclosure for submersible pump V	+	+	+	290609	**328,-**
Filter for heat source III	+	+	+	922486	**594,-**
Centrifugal filter for larger quantities of impurities III [2]	+	-	-	922276	**3.057,-**
Centrifugal filter for larger quantities of impurities IV [2]	-	+	+	922277	**3.191,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- 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**
- **DELIVERY CLASS III**

UNIT TYPE		AQUA 54 CPLA	AQUA 83 CPLA	AQUA 97 CPLA
Order no.		222618	222628	222638
PRICE €		**28.197,-**	**32.286,-**	**36.591,-**
Building heat load				
Suitable building heat load	kW	46 - 54	70 - 85	84 - 99
W10/W35 (EN 14511)				
Heating output	kW	53,90	84,50	98,80
Power consumption	kW	9,30	15,90	19,00
Coefficient of performance (COP)		5,80	5,30	5,20
W10/W50 (EN 14511)				
Heating output	kW	49,70	76,20	89,40
Power consumption	kW	11,80	19,10	22,30
Coefficient of performance (COP)		4,20	4,00	4,00
W10/W60 (EN 14511)				
Heating output	kW	46,50	71,20	83,70
Power consumption	kW	14,20	22,00	26,10
Coefficient of performance (COP)		3,30	3,20	3,20
W10/W18 (EN 14511)				
Cooling capacity	kW	56,00	80,00	100,00
Power consumption	kW	9,00	17,20	21,20
Energy efficiency ratio EER		6,20	4,70	4,70
W10/W7 (EN 14511)				
Cooling capacity	kW	38,00	59,00	74,50
Power consumption	kW	8,10	14,80	18,20
Energy efficiency ratio EER		4,70	4,00	4,10

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	54	48	85	74	99	87
Efficiency ETAs	%	243	173	219	164	213	162
SCOP		6,26	4,52	5,67	4,29	5,53	4,25

[1] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[2] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	AQUA 54 CPLA	AQUA 83 CPLA	AQUA 97 CPLA
Remote controller FB 6104 RH with graphic display and humidity sensor, white	1 pce	1 pce	1 pce
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Flexible hose (2" x 1000 mm with bend), external	4 pce	4 pce	4 pce

OPTIONALLY AVAILABLE	AQUA 54 CPLA	AQUA 83 CPLA	AQUA 97 CPLA	Order no.	Price €
Heating/cooling incl. remote controller with touchscreen (incl. web2com server) at additional charge	+	+	+	980169	**560,-**
Electricity meter III	+	+	+	980189	**1.160,-**
Circulation pump 40-1	+	-	-	922347	**1.613,-**
Circulation pump 65-1	-	+	+	922462	**3.011,-**
3-way switching module (DN 50), external	+	+	+	290342	**377,-**

INDOOR UNIT		AQUA 54 CPLA	AQUA 83 CPLA	AQUA 97 CPLA
Dimensions (HxWxD)	mm	1900x680x680	1900x680x680	1900x680x680
Weight	kg	228	284	306
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A	C63A	C80A
Max. operating current	A	31	50	64
Max. starting current	A	79	105,5	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	9,60	14,70	17,10
Internal pressure differential (WQA)	mbar	60	75	81
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	9,20	14,50	16,90
Internal pressure differential (WNA)	mbar	60	70	75
Residual head (WNA)	mbar	499	672	602
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	AQUA 54 CPLA	AQUA 83 CPLA	AQUA 97 CPLA	Order no.	Price €
Submersible pump V, speed controlled [1]	+	+	+	290608	**4.910,-**
Cooling enclosure for submersible pump V	+	+	+	290609	**328,-**
Filter for heat source III	+	+	+	922486	**594,-**
Centrifugal filter for larger quantities of impurities III [2]	+	-	-	922276	**3.057,-**
Centrifugal filter for larger quantities of impurities IV [2]	-	+	+	922277	**3.191,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- The „Suitable building heat load" figures are guide values for systems in the „Average" climate zone (as per ErP Directive).

OCHSNER AQUA GOLF

WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS II**
- **AVAILABLE TO 4TH QUARTER**

UNIT TYPE		GMWW 7 PLUS	GMWW 11 PLUS	GMWW 14 PLUS
Order no.		254800	254810	254820
PRICE €		**8.931,-**	**10.223,-**	**11.299,-**
Building heat load				
Suitable building heat load	kW	6 - 7	7 - 10	10 - 12
W10/W35 (EN 14511)				
Heating output	kW	6,70	10,00	12,30
Power consumption	kW	1,33	1,70	2,10
Coefficient of performance (COP)		5,10	5,70	5,80
W10/W50 (EN 14511)				
Heating output	kW	6,40	8,30	11,60
Power consumption	kW	1,84	2,30	3,00
Coefficient of performance (COP)		3,50	3,60	3,90
W10/W60 (EN 14511)				
Heating output	kW	6,20	7,90	10,90
Power consumption	kW	2,30	2,90	3,70
Coefficient of performance (COP)		2,70	2,70	2,90

ENERGY EFFICIENCY CLASS							
at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	7	6	10	8	12	11
Efficiency ETAs	%	209	141	250	153	249	161
SCOP		5,42	3,73	6,44	4,03	6,43	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	GMWW 7 PLUS	GMWW 11 PLUS	GMWW 14 PLUS
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce	1 pce
Flexible hose (1 1/4“ x 750 mm with bend), external	4 pce	4 pce	4 pce
Sound insulation underlay	1 pce	1 pce	1 pce
Shell and tube heat exchanger (WQA)	+	+	+

OPTIONALLY AVAILABLE	GMWW 7 PLUS	GMWW 11 PLUS	GMWW 14 PLUS	Order no.	Price €
3-way switching module, internal (incl. additional flexible hose)	+	+	+	990494	**378,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	+	920654	**273,-**
Passive cooling set 1 [1]	+	+	+	290864	**1.389,-**

INDOOR UNIT		GMWW 7 PLUS	GMWW 11 PLUS	GMWW 14 PLUS
Dimensions (HxWxD)	mm	1150x400x650	1150x400x650	1150x400x650
Weight	kg	100	116	120
Hydraulic connection	inch	1 1/4	1 1/4	1 1/4
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C6A	C10A	C10A
Max. operating current	A	4,8	6,2	7,4
Max. starting current	A	14	21,5	26
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	3	4	4
Flow rate (WQA)	m³/h	1,60	1,85	2,20
Internal pressure differential (WQA)	mbar	34	46	46
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	1,20	1,80	2,10
Internal pressure differential (WNA)	mbar	97	100	85
Residual head (WNA)	mbar	564	471	411
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMWW 7 PLUS	GMWW 11 PLUS	GMWW 14 PLUS	Order no.	Price €
Submersible pump I, speed controlled [2]	+	+	+	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source I	+	+	+	922484	**139,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	+	922234	**1.934,-**

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- The „Suitable building heat load“ figures are guide values for systems in the „Average“ climate zone (as per ErP Directive).

OCHSNER AQUA GOLF

WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS II**
- **AVAILABLE TO 4TH QUARTER**

UNIT TYPE		GMWW 11 PLUS VX	GMWW 14 PLUS VX	GMWW 17 PLUS VX
Order no.		254811	254821	254831
PRICE €		**10.223,-**	**11.299,-**	**12.375,-**
Building heat load				
Suitable building heat load	kW	7 - 10	10 - 12	12 - 17
W10/W35 (EN 14511)				
Heating output	kW	10,40	12,30	16,60
Power consumption	kW	1,80	2,10	2,80
Coefficient of performance (COP)		5,70	5,80	5,90
W10/W50 (EN 14511)				
Heating output	kW	8,30	11,60	14,80
Power consumption	kW	2,30	3,00	3,80
Coefficient of performance (COP)		3,60	3,90	3,90
W10/W60 (EN 14511)				
Heating output	kW	7,90	10,90	13,80
Power consumption	kW	2,90	3,70	4,80
Coefficient of performance (COP)		2,70	2,90	2,90

ENERGY EFFICIENCY CLASS

at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	10	8	12	11	17	14
Efficiency ETAs	%	250	153	249	161	253	162
SCOP		6,44	4,03	6,43	4,24	6,52	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	GMWW 11 PLUS VX	GMWW 14 PLUS VX	GMWW 17 PLUS VX
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce	1 pce
Flexible hose (1 1/4" x 750 mm with bend), external	4 pce	4 pce	4 pce
Sound insulation underlay	1 pce	1 pce	1 pce
Shell and tube heat exchanger (WQA)	+	+	+

OPTIONALLY AVAILABLE	GMWW 11 PLUS VX	GMWW 14 PLUS VX	GMWW 17 PLUS VX	Order no.	Price €
3-way switching module, internal (incl. additional flexible hose)	+	+	-	990494	**378,-**
3-way switching module (DN 32), external	+	+	+	290229	**291,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	+	920654	**273,-**
Passive cooling set 1 [1]	+	+	-	290864	**1.389,-**
Passive cooling set 2 [1]	-	-	+	290865	**1.553,-**

INDOOR UNIT		GMWW 11 PLUS VX	GMWW 14 PLUS VX	GMWW 17 PLUS VX
Dimensions (HxWxD)	mm	1150x400x650	1150x400x650	1150x600x650
Weight	kg	116	120	132
Hydraulic connection	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		C25A	C25A	C32A
Max. operating current	A	17,1	22,8	27,9
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	1,85	2,20	3,00
Internal pressure differential (WQA)	mbar	46	46	86
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	1,80	2,10	2,85
Internal pressure differential (WNA)	mbar	100	85	100
Residual head (WNA)	mbar	471	410	485
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMWW 11 PLUS VX	GMWW 14 PLUS VX	GMWW 17 PLUS VX	Order no.	Price €
Submersible pump I, speed controlled [2]	+	+	+	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source I	+	+	-	922484	**139,-**
Filter for heat source II	-	-	+	922485	**301,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	+	922234	**1.934,-**

Notes:
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- The „Suitable building heat load" figures are guide values for systems in the „Average" climate zone (as per ErP Directive).

OCHSNER AQUA GOLF

WATER/WATER HEAT PUMP (MONOVALENT HEATING SYSTEM)

- **GOLF INDOOR UNIT**
- **HEATING**
- **MAX. FLOW TEMP.: 65°C**
- **OTE CONTROLLER**
- **DELIVERY CLASS II**
- **AVAILABLE TO 4TH QUARTER**

UNIT TYPE		GMWW 17 PLUS	GMWW 22 PLUS	GMWW 36 PLUS
Order no.		254830	254840	254860
PRICE €		**12.375,-**	**13.775,-**	**15.389,-**
Building heat load				
Suitable building heat load	kW	12 - 17	17 - 22	28 - 36
W10/W35 (EN 14511)				
Heating output	kW	16,60	22,10	35,30
Power consumption	kW	2,80	3,70	6,20
Coefficient of performance (COP)		5,90	5,90	5,70
W10/W50 (EN 14511)				
Heating output	kW	14,80	19,70	30,90
Power consumption	kW	3,80	5,10	7,80
Coefficient of performance (COP)		3,90	3,90	4,00
W10/W60 (EN 14511)				
Heating output	kW	13,80	18,50	29,60
Power consumption	kW	4,80	6,40	9,90
Coefficient of performance (COP)		2,90	2,90	3,00

ENERGY EFFICIENCY CLASS							
at max. flow temperature	°C	35	55	35	55	35	55
Average climate zone (D to A+++)		A+++	A+++	A+++	A+++	A+++	A+++
P-rated EN 14825	kW	17	14	22	19	35	30
Efficiency ETAs	%	253	162	256	162	235	162
SCOP		6,52	4,24	6,61	4,26	6,08	4,24

[1] For the scope of delivery of the passive cooling set, see page 147.
[2] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope and rope clamps (depending on required delivery head; see page 168)
[3] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	GMWW 17 PLUS	GMWW 22 PLUS	GMWW 36 PLUS
Flow meter (WNA), external	1 pce	1 pce	1 pce
Flow meter (WQA), external	1 pce	1 pce	1 pce
Circulation pump (WNA), internal	1 pce	1 pce	-
Flexible hose (1 1/4“ x 750 mm with bend), external	4 pce	4 pce	-
Flexible hose (2“ x 1000 mm with bend), external	-	-	4 pce
Sound insulation underlay	1 pce	1 pce	1 pce
Shell and tube heat exchanger (WQA)	+	+	-

OPTIONALLY AVAILABLE	GMWW 17 PLUS	GMWW 22 PLUS	GMWW 36 PLUS	Order no.	Price €
Circulation pump 40-1	-	-	+	922347	**1.613,-**
3-way switching module (DN 32), external	+	+	-	290229	**291,-**
3-way switching module (DN 40), external	-	-	+	290341	**354,-**
Service valves with flushing nozzle (2 pce., DN 32)	+	+	-	920654	**273,-**
Passive cooling set 2 [1]	+	-	-	290865	**1.553,-**
Passive cooling set 3 [1]	-	+	-	290866	**1.622,-**
Passive cooling set 4 [1]	-	-	+	290867	**2.577,-**

INDOOR UNIT		GMWW 17 PLUS	GMWW 22 PLUS	GMWW 36 PLUS
Dimensions (HxWxD)	mm	1150x600x650	1150x600x650	1150x600x650
Weight	kg	132	140	167
Hydraulic connection	inch	1 1/4	1 1/4	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C13A	C16A	C25A
Max. operating current	A	9,7	13	21
Max. starting current	A	31	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	4
Flow rate (WQA)	m³/h	3,00	3,90	6,20
Internal pressure differential (WQA)	mbar	86	126	210
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	2,85	3,80	6,10
Internal pressure differential (WNA)	mbar	100	130	195
Residual head (WNA)	mbar	485	302	432
Compressor type		Scroll	Scroll	Scroll

OPTIONAL, HEAT SOURCE SYSTEM	GMWW 17 PLUS	GMWW 22 PLUS	GMWW 36 PLUS	Order no.	Price €
Submersible pump I, speed controlled [2]	+	+	-	290605	**1.259,-**
Submersible pump II, speed controlled [2]	+	+	+	290606	**1.762,-**
Cooling enclosure for submersible pumps (I and II)	+	+	+	290607	**328,-**
Filter for heat source II	+	+	-	922485	**301,-**
Filter for heat source III	-	-	+	922486	**594,-**
Centrifugal filter for larger quantities of impurities I [3]	+	+	-	922234	**1.934,-**
Centrifugal filter for larger quantities of impurities II [3]	-	-	+	922235	**2.352,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- Please observe the machine-specific engineering and installation information (see section Engineering, page 166).
- 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

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

UNIT TYPE		AQUA MULTI DUO 137 HPLA	AQUA MULTI DUO 166 HPLA	AQUA MULTI DUO 180 HPLA	AQUA MULTI DUO 194 HPLA
Order no.		290853	290854	290855	290856
PRICE €		**43.876,-**	**47.847,-**	**51.045,-**	**54.241,-**
W10/W35 (EN 14511)					
Heating output	kW	53,9 - 138,4	84,5 - 169	84,5 - 183,3	98,8 - 197,6
Power consumption	kW	9,3 - 25,2	15,9 - 31,8	15,9 - 34,9	19 - 38
Coefficient of performance (COP)		5,6	5,3	5,3	5,2
W10/W50 (EN 14511)					
Heating output	kW	49,7 - 125,9	76,2 - 152,4	76,2 - 165,6	89,4 - 178,8
Power consumption	kW	11,8 - 30,9	19,1 - 38,2	19,1 - 41,4	22,3 - 44,6
Coefficient of performance (COP)		4	4	4	4
W10/W60 (EN 14511)					
Heating output	kW	46,5 - 117,7	71,2 - 142,4	71,2 - 154,9	83,7 - 167,4
Power consumption	kW	14,2 - 36,2	22 - 44	22 - 48,1	26,1 - 52,2
Coefficient of performance (COP)		3,3	3,2	3,2	3,2

[1] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope, rope clamps, inverter, LC filter and control box (depending on required delivery head; see page 168)
[2] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	AQUA MULTI DUO 137 HPLA	AQUA MULTI DUO 166 HPLA	AQUA MULTI DUO 180 HPLA	AQUA MULTI DUO 194 HPLA
Flow meter (WNA), external	2 pce	2 pce	2 pce	2 pce
Flow meter (WQA), external	2 pce	2 pce	2 pce	2 pce
Flexible hose (2" x 1000 mm with bend), external	8 pce	8 pce	8 pce	8 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	AQUA MULTI DUO 137 HPLA	AQUA MULTI DUO 166 HPLA	AQUA MULTI DUO 180 HPLA	AQUA MULTI DUO 194 HPLA	Order no.	Price €
Electricity meter III	2 pce	2 pce	2 pce	2 pce	980189	**1.160,-**
Circulation pump 40-1	1 pce	-	-	-	922347	**1.613,-**
Circulation pump 65-1	1 pce	2 pce	2 pce	2 pce	922462	**3.011,-**

INDOOR UNIT		AQUA MULTI DUO 137 HPLA	AQUA MULTI DUO 166 HPLA	AQUA MULTI DUO 180 HPLA	AQUA MULTI DUO 194 HPLA
Dimensions (HxWxD)	mm	1900x2160x680	1900x2160x680	1900x2160x680	1900x2160x680
Weight	kg	512	568	590	612
Hydraulic connection	inch	2	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50	3/400/50
Fuse protection		C40A / C63A	C63A / C63A	C63A / C80A	C80A / C80A
Max. operating current	A	31 / 50	50 / 50	50 / 64	64 / 64
Max. starting current	A	79 / 105,5	105,5 / 105,5	105,5 / 124	124 / 124
Refrigerant		R410A	R410A	R410A	R410A
Evaporator type (WQA)		Plate heat exchanger	Plate heat exchanger	Plate heat exchanger	Plate heat exchanger
Evaporator material (WQA)		Stainless steel 1.4401	Stainless steel 1.4401	Stainless steel 1.4401	Stainless steel 1.4401
Temperature differential (WQA)	K	4	4	4	4
Flow rate (WQA)	m³/h	9,6 - 24,3	14,7 - 29,4	14,7 - 31,8	17,1 - 34,2
Internal pressure differential (WQA)	mbar	60 / 75	75 / 75	75 / 81	81 / 81
Temperature differential (WNA)	K	5	5	5	5
Flow rate (WNA)	m³/h	9,2 - 23,7	14,5 - 29	14,5 - 31,4	16,9 - 33,8
Internal pressure differential (WNA)	mbar	60 / 70	70 / 70	70 / 75	75 / 75
Residual head (WNA)	mbar	499 / 672	672 / 672	672 / 602	602 / 602
Compressor type		Scroll	Scroll	Scroll	Scroll
Number of compressors	pce	2	2	2	2

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	AQUA MULTI DUO 137 HPLA	AQUA MULTI DUO 166 HPLA	AQUA MULTI DUO 180 HPLA	AQUA MULTI DUO 194 HPLA	Order no.	Price €
Submersible pump VII, speed controlled [1]	1 pce	-	-	-	290703	**14.244,-**
Submersible pump VIII, speed controlled [1]	-	1 pce	1 pce	1 pce	290704	**14.869,-**
Cooling enclosure for submersible pump VII	1 pce	-	-	-	290707	**597,-**
Cooling enclosure for submersible pump VIII	-	1 pce	1 pce	1 pce	290708	**1.408,-**
Filter for heat source III	2 pce	2 pce	2 pce	2 pce	922486	**594,-**
Centrifugal filter for larger quantities of impurities III [2]	1 pce	-	-	-	922276	**3.057,-**
Centrifugal filter for larger quantities of impurities IV [2]	1 pce	2 pce	2 pce	2 pce	922277	**3.191,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- 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 section Engineering, page 174).

OCHSNER AQUA MULTI M6

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

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

UNIT TYPE		AQUA MULTI TRIO 234 HPLA	AQUA MULTI TRIO 263 HPLA	AQUA MULTI TRIO 291 HPLA
Order no.		290857	290858	290859
PRICE €		**70.997,-**	**74.968,-**	**81.361,-**
W10/W35 (EN 14511)				
Heating output	kW	53,9 - 237,2	84,5 - 267,8	98,8 - 296,4
Power consumption	kW	9,3 - 44,2	15,9 - 50,8	19 - 57
Coefficient of performance (COP)		5,4	5,3	5,2
W10/W50 (EN 14511)				
Heating output	kW	49,7 - 215,3	76,2 - 241,8	89,4 - 268,2
Power consumption	kW	11,8 - 53,2	19,1 - 60,5	22,3 - 66,9
Coefficient of performance (COP)		4	4	4
W10/W60 (EN 14511)				
Heating output	kW	46,5 - 201,4	71,2 - 226,1	83,7 - 251,1
Power consumption	kW	14,2 - 62,3	22 - 70,1	26,1 - 78,3
Coefficient of performance (COP)		3,2	3,2	3,2

[1] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope, rope clamps, inverter, LC filter and control box (depending on required delivery head; see page 168)
[2] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	AQUA MULTI TRIO 234 HPLA	AQUA MULTI TRIO 263 HPLA	AQUA MULTI TRIO 291 HPLA
Flow meter (WNA), external	3 pce	3 pce	3 pce
Flow meter (WQA), external	3 pce	3 pce	3 pce
Flexible hose (2" x 1000 mm with bend), external	12 pce	12 pce	12 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	AQUA MULTI TRIO 234 HPLA	AQUA MULTI TRIO 263 HPLA	AQUA MULTI TRIO 291 HPLA	Order no.	Price €
Electricity meter III	3 pce	3 pce	3 pce	980189	**1.160,-**
Circulation pump 40-1	1 pce	-	-	922347	**1.613,-**
Circulation pump 65-1	2 pce	3 pce	3 pce	922462	**3.011,-**

INDOOR UNIT		AQUA MULTI TRIO 234 HPLA	AQUA MULTI TRIO 263 HPLA	AQUA MULTI TRIO 291 HPLA
Dimensions (HxWxD)	mm	1900x3640x680	1900x3640x680	1900x3640x680
Weight	kg	818	874	918
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C40A / C63A / C80A	C63A / C63A / C80A	C80A / C80A / C80A
Max. operating current	A	31 / 50 / 64	50 / 50 / 64	64 / 64 / 64
Max. starting current	A	79 / 105,5 / 124	105,5 / 105,5 / 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	9,6 - 41,4	14,7 - 46,5	17,1 - 51,3
Internal pressure differential (WQA)	mbar	60 / 75 / 81	75 / 75 / 81	81 / 81 / 81
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	9,2 - 40,6	14,5 - 45,9	16,9 - 50,7
Internal pressure differential (WNA)	mbar	60 / 70 / 75	70 / 70 / 75	75 / 75 / 75
Residual head (WNA)	mbar	499 / 672 / 602	672 / 672 / 602	602 / 602 / 602
Compressor type		Scroll	Scroll	Scroll
Number of compressors	pce	3	3	3

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	AQUA MULTI TRIO 234 HPLA	AQUA MULTI TRIO 263 HPLA	AQUA MULTI TRIO 291 HPLA	Order no.	Price €
Submersible pump VIII, speed controlled [1]	1 pce	1 pce	-	290704	**14.869,-**
Submersible pump IX, speed controlled [1]	-	-	1 pce	290705	**17.408,-**
Cooling enclosure for submersible pump VIII	1 pce	1 pce	-	290708	**1.408,-**
Cooling enclosure for submersible pump IX	-	-	1 pce	290709	**1.383,-**
Filter for heat source III	3 pce	3 pce	3 pce	922486	**594,-**
Centrifugal filter for larger quantities of impurities III [2]	1 pce	-	-	922276	**3.057,-**
Centrifugal filter for larger quantities of impurities IV [2]	2 pce	3 pce	3 pce	922277	**3.191,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- 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 section Engineering, page 174).

OCHSNER AQUA MULTI M6

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

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

UNIT TYPE		AQUA MULTI QUATTRO 332 HPLA	AQUA MULTI QUATTRO 360 HPLA	AQUA MULTI QUATTRO 388 HPLA
Order no.		290860	290861	290862
PRICE €		**95.695,-**	**102.088,-**	**108.482,-**
W10/W35 (EN 14511)				
Heating output	kW	84,5 - 338	84,5 - 366,6	98,8 - 395,2
Power consumption	kW	15,9 - 63,6	15,9 - 69,8	19 - 76
Coefficient of performance (COP)		5,3	5,3	5,2
W10/W50 (EN 14511)				
Heating output	kW	76,2 - 304,8	76,2 - 331,2	89,4 - 357,6
Power consumption	kW	19,1 - 76,4	19,1 - 82,8	22,3 - 89,2
Coefficient of performance (COP)		4	4	4
W10/W60 (EN 14511)				
Heating output	kW	71,2 - 284,8	71,2 - 309,8	83,7 - 334,8
Power consumption	kW	22 - 88	22 - 96,2	26,1 - 104,4
Coefficient of performance (COP)		3,2	3,2	3,2

[1] Submersible pump incl. non-return valve, motor protection relay, 20 m cable, steel rope, rope clamps, inverter, LC filter and control box (depending on required delivery head; see page 168)
[2] Pressure differential of min. 0.8 bar required.

INCLUDED AS STANDARD	AQUA MULTI QUATTRO 332 HPLA	AQUA MULTI QUATTRO 360 HPLA	AQUA MULTI QUATTRO 388 HPLA
Flow meter (WNA), external	4 pce	4 pce	4 pce
Flow meter (WQA), external	4 pce	4 pce	4 pce
Flexible hose (2" x 1000 mm with bend), external	16 pce	16 pce	16 pce

OPTIONALLY AVAILABLE (PRICE/UNIT)	AQUA MULTI QUATTRO 332 HPLA	AQUA MULTI QUATTRO 360 HPLA	AQUA MULTI QUATTRO 388 HPLA	Order no.	Price €
Electricity meter III	4 pce	4 pce	4 pce	980189	**1.160,-**
Circulation pump 65-1	4 pce	4 pce	4 pce	922462	**3.011,-**

INDOOR UNIT		AQUA MULTI QUATTRO 332 HPLA	AQUA MULTI QUATTRO 360 HPLA	AQUA MULTI QUATTRO 388 HPLA
Dimensions (HxWxD)	mm	1900x5120x680	1900x5120x680	1900x5120x680
Weight	kg	1136	1180	1224
Hydraulic connection	inch	2	2	2
Phases/nominal voltage/frequency	~/V/Hz	3/400/50	3/400/50	3/400/50
Fuse protection		C63A / C63A / C63A / C63A	C63A / C63A / C80A / C80A	C80A / C80A / C80A / C80A
Max. operating current	A	50 / 50 / 50 / 50	50 / 50 / 64 / 64	64 / 64 / 64 / 64
Max. starting current	A	105,5 / 105,5 / 105,5 / 105,5	105,5 / 105,5 / 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	14,7 - 58,8	14,7 - 63,6	17,1 - 68,4
Internal pressure differential (WQA)	mbar	75 / 75 / 75 / 75	75 / 75 / 81 / 81	81 / 81 / 81 / 81
Temperature differential (WNA)	K	5	5	5
Flow rate (WNA)	m³/h	14,5 - 58	14,5 - 62,8	16,9 - 67,6
Internal pressure differential (WNA)	mbar	70 / 70 / 70 / 70	70 / 70 / 75 / 75	75 / 75 / 75 / 75
Residual head (WNA)	mbar	672 / 672 / 672 / 672	672 / 672 / 602 / 602	602 / 602 / 602 / 602
Compressor type		Scroll	Scroll	Scroll
Number of compressors	pce	4	4	4

OPTIONAL, HEAT SOURCE SYSTEM (PRICE/UNIT)	AQUA MULTI QUATTRO 332 HPLA	AQUA MULTI QUATTRO 360 HPLA	AQUA MULTI QUATTRO 388 HPLA	Order no.	Price €
Submersible pump IX, speed controlled [1]	1 pce	-	-	290705	**17.408,-**
Submersible pump X, speed controlled [1]	-	1 pce	1 pce	290706	**17.967,-**
Cooling enclosure for submersible pump IX	1 pce	-	-	290709	**1.383,-**
Cooling enclosure for submersible pump X	-	1 pce	1 pce	290710	**1.408,-**
Filter for heat source III	4 pce	4 pce	4 pce	922486	**594,-**
Centrifugal filter for larger quantities of impurities IV [2]	4 pce	4 pce	4 pce	922277	**3.191,-**

Notes:
- In the case of water/water heat pumps with a plate heat exchanger as evaporator (heat source system), the evaporator is also available stainless steel soldered. Price on request.
- 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 section Engineering, page 174).

QUALITY ACCESSORIES

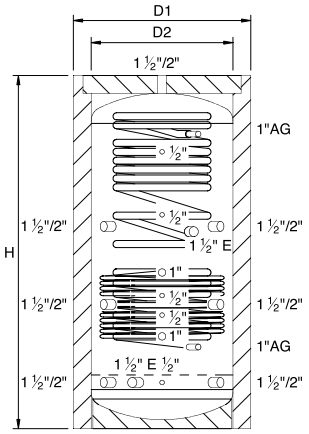
FROM OCHSNER

TANKS

UNIFRESH®

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

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



Insulated base

Main connection dimensions:
1 ½" 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 €	**2.305,-**	**2.524,-**	**3.292,-**	**3.621,-**	**3.841,-**	**4.060,-**
Delivery class	I	II	I	II	I	II
Energy efficiency class (F to A+)	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	[m²]	–	2,3	–	2,5	–	3,1
Freshwater coil	[l] / [m²]	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 500S	UNI 800 / UNI 800S	UNI 1000 / UNI 1000S
DHW output [4] as DHW tank	at 15 l/min	[litres]	300	500	625
	at 20 l/min	[litres]	280	450	560
	at 30 l/min	[litres]	230	370	460
Max. heat pump output, DHW only [5]		[kW]	23	30	36
Coefficient of performance N_L at 15 l/min			2,5	3,5	4,4
DHW output [6] as combination buffer tank	at 15 l/min	[litres]	220	330	410
	at 20 l/min	[litres]	180	270	340
	at 30 l/min	[litres]	130	210	260
Max. heat pump output with combination buffer tank		[kW]	11	17	22
Coefficient of performance N_L at 15 l/min			1,0	2,5	3,2

[1] Standby heat losses according to EN 12897:2006
[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.

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

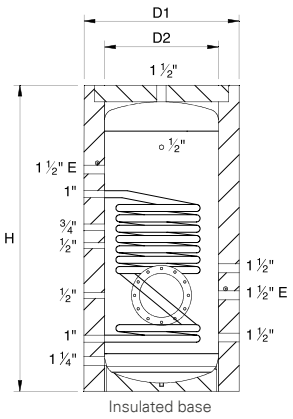
Please note:
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- Recommended tank volume: 30 l/kW heat pump output, for MAP funding and smart grid functionality. In Germany, a correctly sized buffer tank (30 l/kW for standard consumption) is taken 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

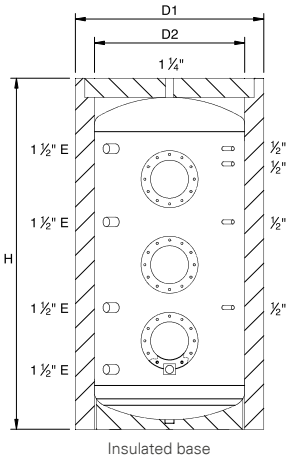
HEAT PUMP DHW TANKS

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

SP 300 / 500



SP 750 / 1000



APPLIANCE TYPE	SP 300	SP 500	SP 750	SP 1000
Order no.	920823	920825	920584	920585
PRICE €	**1.317,-**	**1.756,-**	**2.744,-**	**2.963,-**
Delivery class	I	I	I	I
Energy efficiency class (F to A+)	B	B	C	C

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	[m²]	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 [1]	[W]	67	81	135	142
Number of sleeves for electric immersion heater		2	2	2	2
Max. operating pressure/test pressure	[bar]	6/9	6/9	6/9	6/9

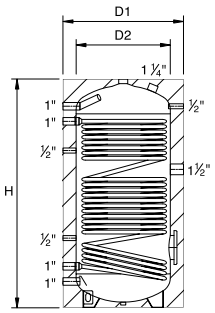
[1] Standby heat losses according to EN 12897:2006
[2] Non-removable tank insulation (fixed foam) D1 must be taken into account as transport dimension.
[3] Suitable up to 17 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% $V_{nom\ HP}$. With air as the heat source, the output at 35°C air temperature must be taken into account.
[4] Suitable up to 20 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% $V_{nom\ HP}$. With air as the heat source, the output at 35°C air temperature must be taken into account.
[5] 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.
[6] Tank incl. anode tester
[7] Suitable up to 8 kW at 65°C flow temperature for max. DHW temp. 59°C at 100% $V_{nom\ HP}$. With air as the heat source, the output at 35°C air temperature must be taken into account.

1½" 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

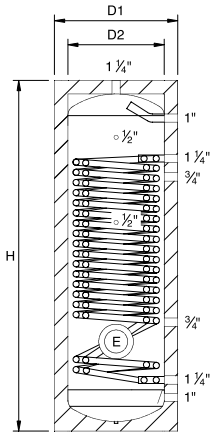
- DHW heating through a built-in coil
- Incl. thermal insulation
- Superior energy efficiency

SP 220



Insulated base

SP 350 / 550



Insulated base

APPLIANCE TYPE		SP 220	SP 350 [6]	SP 550 [6]
Order no.		920889	920709	920710
PRICE €		**1.244,-**	**1.936,-**	**2.367,-**
Delivery class		II	I	I
Energy efficiency class (F to A+)		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	[m²]	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 [1]	[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

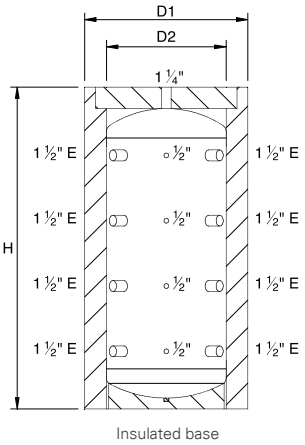
Please note:
- The insulating caps for unused tank connections (1 1/4", 1 1/2" and 2") are supplied with the product.
- OCHSNER tanks have connectors of the shape and size required for the hydraulics. We provide no warranty for products manufactured by external suppliers.
- Limit W15/W50 DHW temperature and max. 7K spread between coil inlet and outlet.

TANKS

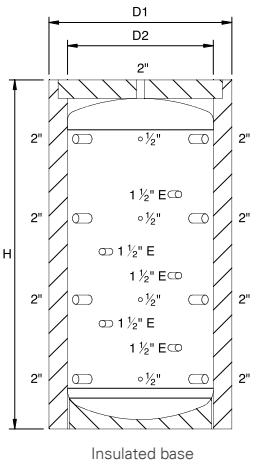
HEAT PUMP BUFFER TANKS

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

PU 200 / 300 / 500



PU 800 / 1000 / 1500 / 2000



APPLIANCE TYPE	PU 200	PU 300	PU 500	PU 800	PU 800S
Order no.	920827	920828	920829	920831	920830
PRICE €	**537,-**	**645,-**	**752,-**	**1.290,-**	**1.506,-**
Delivery class	I	I	I	I	II
Energy efficiency class (F to A+)	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	[m²]	–	–	–	–	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 [1]	[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	[m³/h]	1,1	1,7	2,9	4,6	2,9

FOR CASCADES WITH HEAT PUMP MANAGEMENT OF THE OTE 3, [4] APPLIES

Standard tanks		**PU 200 DN 40 1 1/2" fem.**	**PU 300 DN 40 1 1/2" fem.**	**PU 500 DN 40 1 1/2" fem.**	**PU 800 DN 50 2" fem.**	**PU 1000 DN 50 2" fem.**	**PU 1500 DN 50 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	[m³/h]	4,0	4,0	4,0	8,0	9,0	9,0

Example:
2 pce. AIR 29, output per HP at standard point (L2/W35) 21.8 kW with nominal flow rate 4.4 m³/h
➔ **Cascade output 43.6 kW** with total flow rate 8.8 m³/h
➔ **PU 1000 DN 50 1 1/2" fem.**

[1] Standby heat losses according to EN 12897:2006
[2] Including AQUA 83, AQUA 97, TERRA 61. TERRA 76
[3] PU 2000 is required for AIR 80
[4] A larger tank volume may be necessary for systems with cascade management via a third party controller.

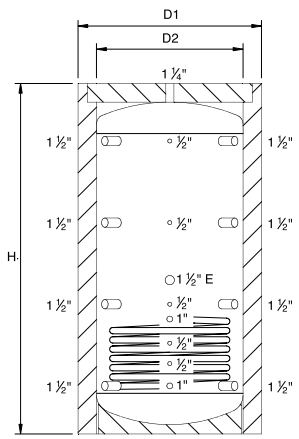
1½" E: Sleeve suitable for fitting an electric immersion heater
E: for installing an electric immersion heater with flange

ÖKO-MASTER SERIES®

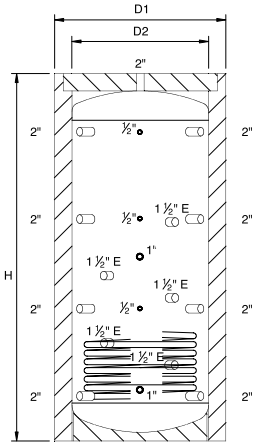
SG Ready

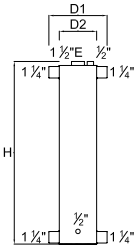
ErP READY

PU 800S



PU 1000S





APPLIANCE TYPE	PU 1000	PU 1000S	PU 1500	PU 2000	Low loss header
Order no.	920832	920837	920789	920784	990798
PRICE €	**1.398,-**	**1.613,-**	**2.977,-**	**3.879,-**	**288,-**
Delivery class	I	II	II	III	I
Energy efficiency class (F to A+)	B	B	C		

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	[m²]	–	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 [1)]	[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	[m³/h]	6	6	10.3 [2)]	13.7 [3)]	–

Please note:
- 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 incl. flange DN 65		PU 1500 incl. flange DN 65		PU 1500 incl. flange DN 80		PU 2000 incl. flange DN 80	
Number of flanges	[pce]	**4**	**8**	**4**	**8**	**4**	**8**	**4**	**8**
Order no.		920698	920699	920855	920856	920857	920858	920801	920852
PRICE €		**2.080,-**	**2.333,-**	**3.364,-**	**3.716,-**	**3.405,-**	**3.798,-**	**4.894,-**	**5.289,-**
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		C		C			

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 [1]	[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	

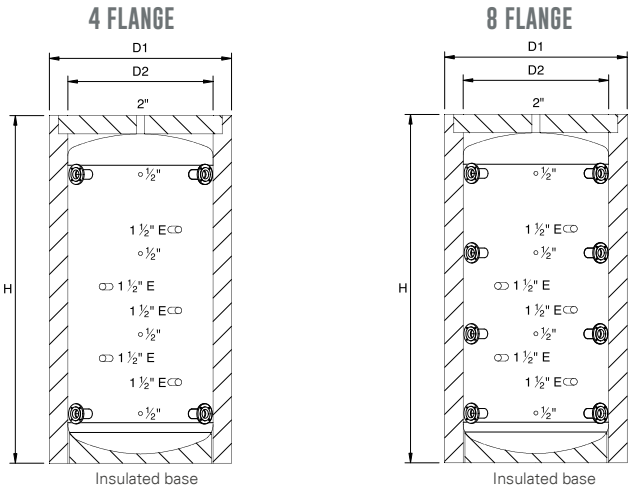
FOR CASCADES WITH HEAT PUMP MANAGEMENT OF THE OTE 3, [2] APPLIES

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 (L2/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**

[1] Standby heat losses according to EN 12897:2006
[2] 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	
Number of flanges	[pce]	**4**	**8**	**4**	**8**	**4**	**8**
Order no.		920853	920854	920604	920609	920610	920611
PRICE €		**5.003,-**	**5.506,-**	**6.838,-**	**7.337,-**	**6.905,-**	**7.473,-**
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 [1)]	[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:
- 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
Price € incl. accessories		**1.557,-**	**1.831,-**	**2.011,-**	**2.750,-**
Order no., nickel-soldered		920754	920755	920756	920799
Price € incl. accessories, nickel-soldered		**2.090,-**	**2.477,-**	**2.711,-**	**3.930,-**
Nominal draw-off rate [1]	[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 [1]

		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					
[litres]	[litres]	[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.[1]

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. There are many ways of generating the high DHW temperatures which are needed in comparatively small amounts, such as increasing the buffer temperature.

[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, delivery head: 1.2 m, delivery capacity: 0.8 m³/h

OPTIONAL ACCESSORIES

	Models	Order no.	Price €
Buffer return optimisation set	OFWOR	920668	**179,-**
DHW circulation pump set (incl. DHW circulation pump and timer) [2)]	OFWZP	920669	**490,-**
Thermal insert for 65°C		920570	**53,-**

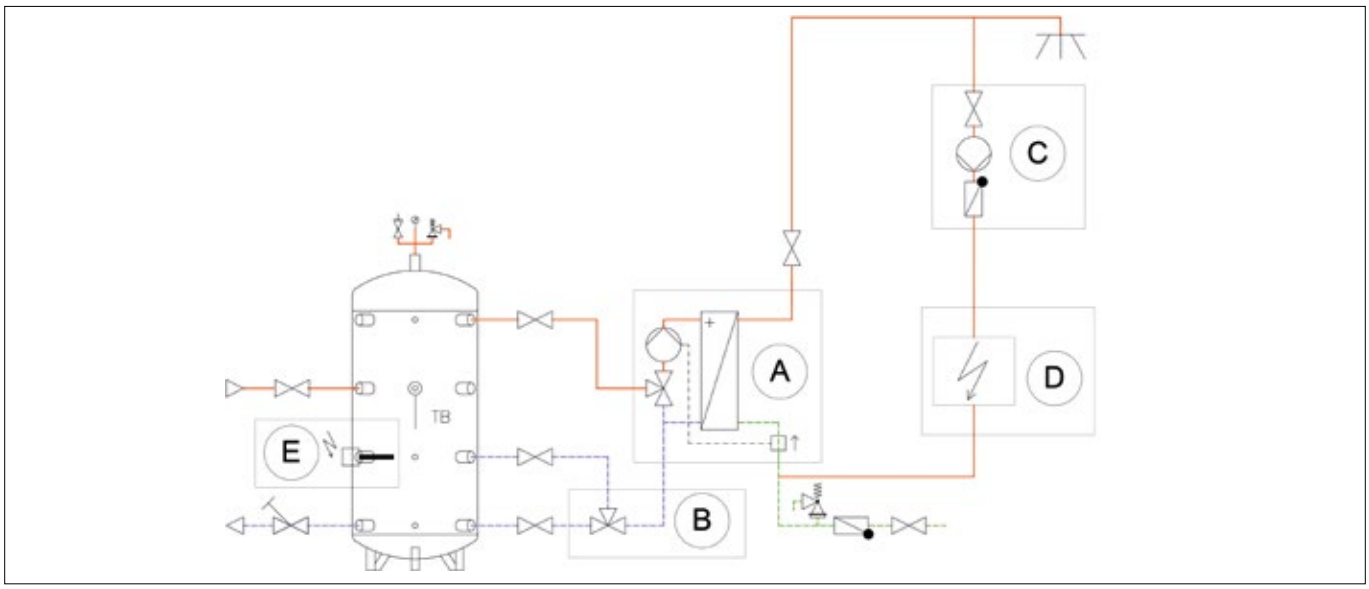
	Energy efficiency class (F to A+)	Connected load	Phases/nominal voltage/frequency	Nominal capacity	Standby power consumption (24 h at 65°C)	Dimensions (HxWxD)	Order no.	Price €
		[kW]	[~/V/Hz]	[l]	[kWh]	[mm]		
Wall mounted tank 10 litres	A	2	1/230/50	10	0,34	503x295x275	920838	**566,-**
Wall mounted tank 30 litres	A	1-4	1/230/50	30	0,46	770x410x420	920839	**837,-**
		1-6	3/400/50					

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**				**Freshwater module with DHW circulation and buffer return optimisation**			
			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 €	**2.136,-**	**-**	**-**	-	**2.611,-**	**-**	-	-	**2.785,-**	-	-	-
500	PU 500 DN 40	Order no.	180029	180033	-	-	180044	180048	-	-	180059	180063	-	-
		Price €	**2.240,-**	**2.505,-**	**-**	-	**2.715,-**	**2.981,-**	**-**	-	**2.889,-**	**3.154,-**	**-**	-
800	PU 800 DN 50	Order no.	180030	180034	180037	180040	180045	180049	180052	180055	180060	180064	180067	180070
		Price €	**2.763,-**	**3.028,-**	**3.203,-**	**3.920,-**	**3.238,-**	**3.504,-**	**3.678,-**	**4.395,-**	**3.411,-**	**3.677,-**	**3.851,-**	**4.569,-**
1000	PU 1000 DN 50	Order no.	180031	180035	180038	180041	180046	180050	180053	180056	180061	180065	180068	180071
		Price €	**2.865,-**	**3.132,-**	**3.306,-**	**4.024,-**	**3.342,-**	**3.608,-**	**3.782,-**	**4.499,-**	**3.515,-**	**3.781,-**	**3.955,-**	**4.671,-**
1500	PU 1500 DN 50	Order no.	180032	180036	180039	180042	180047	180051	180054	180057	180062	180066	180069	180072
		Price €	**4.398,-**	**4.664,-**	**4.838,-**	**5.555,-**	**4.874,-**	**5.140,-**	**5.313,-**	**6.030,-**	**5.046,-**	**5.313,-**	**5.486,-**	**6.203,-**

SCHEMATIC DIAGRAM



A) Freshwater module
B) Buffer return optimisation set
C) DHW circulation pump set
D) Wall mounted tank
E) Electric immersion heater; see page 118

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 +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.

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.

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.

[1] 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)	**5.279,-**	**5.891,-**
Connections on cold and DHW side	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

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.

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 (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.

SPECIFICATION				
Buffer temperature	+60°C	+65°C	+70°C	+75°C
T-premix	+55°C [1)]	+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 85	+45°C: 72 l/min	+45°C: 85 l/min	+45°C: 92 l/min	+45°C: 99 l/min

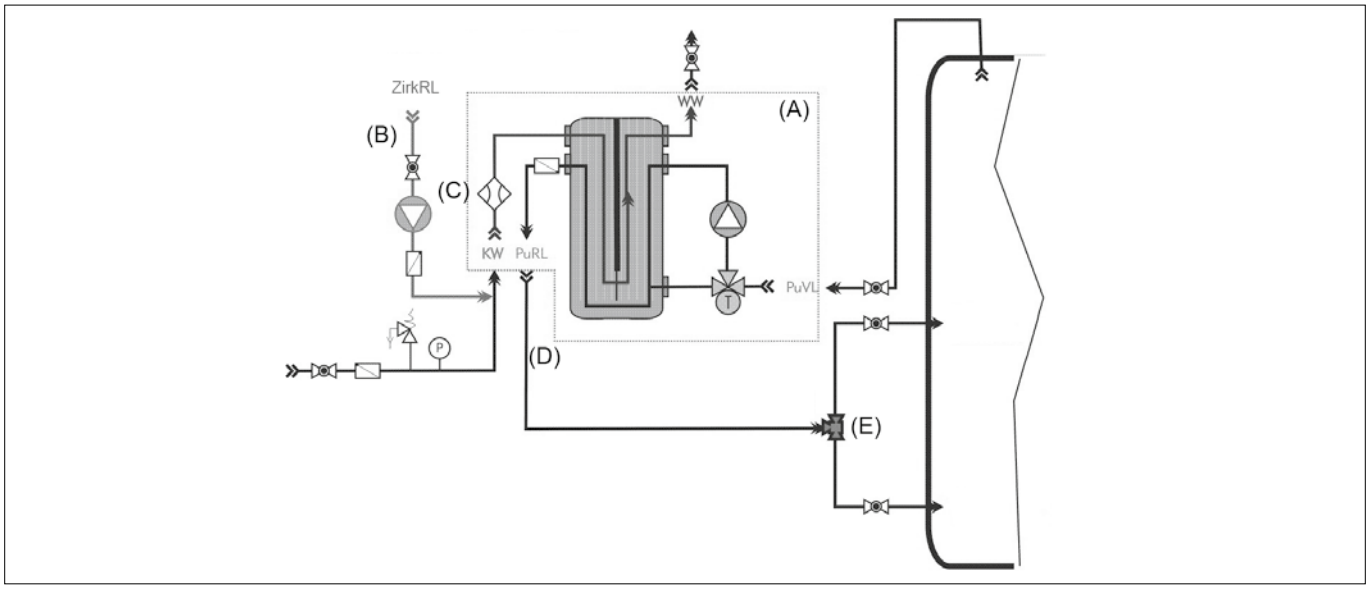
- Delivery capacity per buffer tank temperature and DHW temperature at full load operation, cold water inlet +10°C
- T-premix [1)] = DHW temperature in low load/DHW circulation operation

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.

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

OPTIONAL ACCESSORIES

	Models	Order no.	Price €
Buffer return switching valve 1 1/4"	OFWMRV	920717	**186,-**



A) Freshwater module (supplied)
B) DHW circulation system
C) Float switch
D) Buffer return
E) Return switching valve

ZirkRL = circulation return
WW = domestic hot water
KW = cold water
PuRL = buffer return
PuVL = buffer flow

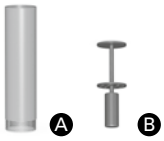
GENERAL ACCESSORIES

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″** kvs 19	**1 1/4″** kvs 23	**1 1/2″** kvs 32	**2″** kvs 35
Order no.	290610	290611	290612	290613
Price €	**347,-**	**403,-**	**449,-**	**488,-**

ACCESSORIES:



Replacement filter, st. steel Ⓐ	**50 µm**	**100 µm**	**200 µm**	**500 µm**
Order no.	914373	914374	914375	914376
Price €	**54,-**	**54,-**	**54,-**	**54,-**

Magnet insert for st. steel filter (optional) Ⓑ	
Order no.	914377
Price €	**121,-**

Heating protection filter with stainless steel filter 100 µm; includes 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 €	**1.413,-**	**1.868,-**	**2.340,-**	**3.044,-**	**4.065,-**	**5.074,-**

ACCESSORIES:

Filter casing Ⓒ in flange design						
Order no.	914386	914392	914396	914400	914404	914409
Price €	**845,-**	**1.199,-**	**1.551,-**	**1.934,-**	**2.718,-**	**3.462,-**
Stainless steel filter 50 µm Ⓓ						
Order no.	914387	914393	914397	914401	914405	914410
Price €	**508,-**	**608,-**	**730,-**	**1.048,-**	**1.286,-**	**1.551,-**
Stainless steel filter 100 µm Ⓓ						
Order no.	914388	914394	914398	914402	914406	914411
Price €	**508,-**	**608,-**	**730,-**	**1.048,-**	**1.286,-**	**1.551,-**
Stainless steel filter 200 µm Ⓓ						
Order no.	914389	914395	914399	914403	914407	914412
Price €	**508,-**	**608,-**	**730,-**	**1.048,-**	**1.286,-**	**1.551,-**

Pressure gauge set 0-4 bar Ⓔ Glycerine-filled pressure gauge set						
Order no.	914391	914391	914391	914391	914391	914391
Price €	**61,-**	**61,-**	**61,-**	**61,-**	**61,-**	**61,-**

Magnet insert for st. steel filter Ⓕ						
Order no.	914424	914424	914425	914426	914408	914413
Price €	**91,-**	**91,-**	**91,-**	**216,-**	**429,-**	**476,-**

HIGH EFFICIENCY ENERGY SAVING CIRCULATION PUMP WQA/WNA EXTERNAL 230 V

ErP READY

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 €	**1.418,-**	**1.613,-**	**2.304,-**	**2.809,-**	**3.011,-**	**5.395,-**	**6.354,-**

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.

Submersible pumps I and II:
- Inverter integrated in the submersible pump (set with mobile control unit)
- Steel rope
- 20 m cable

Submersible pump V to X:
- With external inverter
- LC filter
- Control box
- Steel rope
- 20 m cable

External inverter incl. LC filter for submersible pumps V TO X:

The external inverter is intended for installation in a customer-supplied control box. Cabling is not supplied.

The setting is made by OCHSNER customer service during commissioning. The settings are stored in the inverter.

Optional for the submersible pumps:
Cooling enclosure to guarantee heat transfer in operation with larger drill wells and/or buried wells.

Submersible pump	I	II	V	VII	VIII	IX	X
Diameter [inches]	3	3	4	6	6	6	6
Order no.	290605	290606	290608	290703	290704	290705	290706
Price €	**1.259,-**	**1.762,-**	**4.910,-**	**14.244,-**	**14.869,-**	**17.408,-**	**17.967,-**

ACCESSORIES:

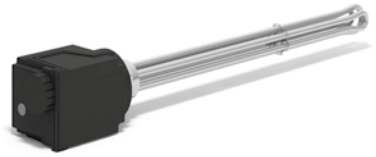
Cooling enclosure							
Phases / voltage [V] / frequency [Hz]	1/230/50	1/230/50	3/400/50	3/400/50	3/400/50	3/400/50	3/400/50
Order no.	290607	290607	290609	290707	290708	290709	290710
Price €	**328,-**	**328,-**	**328,-**	**597,-**	**1.408,-**	**1.383,-**	**1.408,-**

Mobile control unit for submersible pumps I and II:
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.

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

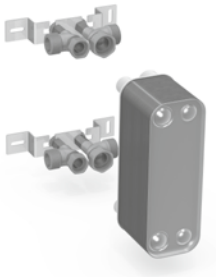
Type		Electric immersion heater 2.3	Electric immersion heater 3.0	Electric immersion heater 6	Electric immersion heater 9
Output/rated voltage	[kW]/[V]	2.3 / 230	3.0 / 400	6 / 400	9 / 400
Installation length	[mm]	390	390	500	710
Order no.		922506	922507	922508	922509
Price €		**253,-**	**253,-**	**277,-**	**301,-**

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 €	**697,-**	**873,-**	**1.047,-**	**1.862,-**	**2.037,-**	**2.328,-**
Wall bracket incl. 5/4" threaded elbow	Order no.	914366	914367	914367			
	Price €	**170,-**	**176,-**	**176,-**			
Screw connection 2" straight	Order no.				914368	914368	914368
	Price €				**258,-**	**258,-**	**258,-**

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 170

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


Without TacoSetter


With TacoSetter

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		**483,-**	**594,-**	**671,-**	**749,-**	**869,-**	**996,-**	**1.105,-**	**1.150,-**	**1.324,-**
Order no.		916324	916338	916339	916340	916341	916342	916343	916344	916345
Set price € with TacoSetter		**658,-**	**719,-**	**844,-**	**941,-**	**1.085,-**	**1.257,-**	**1.404,-**	**1.552,-**	**1.701,-**

FROST PROTECTION CONCENTRATES

	Ethylene glycol based [1]	O-Cool-Pro [2]
Order no.	928153	928137
Price €	**130,-**	**222,-**

SERVICE VALVES WITH FLUSHING NOZZLES

Installation suggestion for OWH 32, see page 167

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 €	**273,-**	**504,-**	**660,-**

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 €	**291,-**	**354,-**	**377,-**

[1] 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)
[2] 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
OCHSNER TRONIC SMART

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.

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:
  - On your home network via WiFi
  - For remote access via the internet

COMMUNICATION WITH THE HEAT PUMP

- LAN connection as standard for connection to the home network and/or internet
- Options for remote maintenance and system updates via encrypted internet connection
- Communication with building management systems via Modbus [5)]
- Smart grid ready

FUNCTIONS AND OPERATING MODES

- Functions of an OTS control unit:
  - 4 heating/cooling circuits
    (more than 2 heating circuits: auxiliary module [5)] required)
  - 1 DHW circuit
  - 1 pool heater (optional)
- Cascade solutions [6)]
- Standard heat metering [1)] 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

[1)] Limited accuracy (not suitable for billing)

COMMISSIONING

- Separate user interface for the system installer (for activating pumps and 3-way switching modules) [5]
- 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

OTS AUXILIARY MODULES [5]

The OTS auxiliary modules are designed for wall mounting. Connection to the OTS controller takes place via a four-wire bus cable.

Auxiliary modules	Order no.	Price €
Auxiliary module A (heating circuit with mixing valve)	290801	**316,-**
Auxiliary module B (multifunction)	290802	**316,-**
Auxiliary module C (cooling)	290803	**316,-**
Auxiliary module D (analogue building management system)	290804	**316,-**
Assembly for DHW charging pump [1]	290806	**42,-**

OTS ROOM SENSORS

Hardwired room sensors	Order no.	Price €
Room temperature sensors	918379	**89,-**
Room temperature and humidity sensor	918380	**116,-**
Wireless room sensors [6]		
Outdoor temperature sensor incl. gateway	290807	**526,-**
Room temperature sensors incl. gateway	290808	**501,-**
Room temperature and humidity sensors incl. gateway	290809	**620,-**
Repeaters [3]	918381	**249,-**
Additional room temperature sensor [4]	918382	**171,-**
Additional room temperature and humidity sensor [4]	918383	**291,-**

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: Heating circuit with mixing valve	Auxiliary module B: Multifunction	Auxiliary module C: Cooling	Auxiliary module D: Building management system, analogue
Control of heat pump as heat generator	■				
Control of auxiliary heater (electric immersion heater) as heat generator	■				
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 [1]	■				
Pressure sensor of the heat sink system	■				
DHW circulation pump [5]	■				
Return temperature sensor for DHW circulation		■	■	■	■
Control output for cooling mode changeover with individual room control	■ [2]	■		■	
Analogue target value setting to the heat pump (0-10 V)					■
Heating or cooling operating mode selection, digital input					■
Heat pump shutdown, digital input					■
Cooling/defrost operating mode information, digital output					■
Heating operating mode information, digital output					■
Sum fault information digital output	■				■
Buffer tank cross-connected via two diverter valves for cooling mode				■	
DHW auxiliary heater			■		■
Pool heating, digital output and digital input			■		
Additional energy generator (e.g. boiler, electric immersion heater), digital output [6]			■	■	

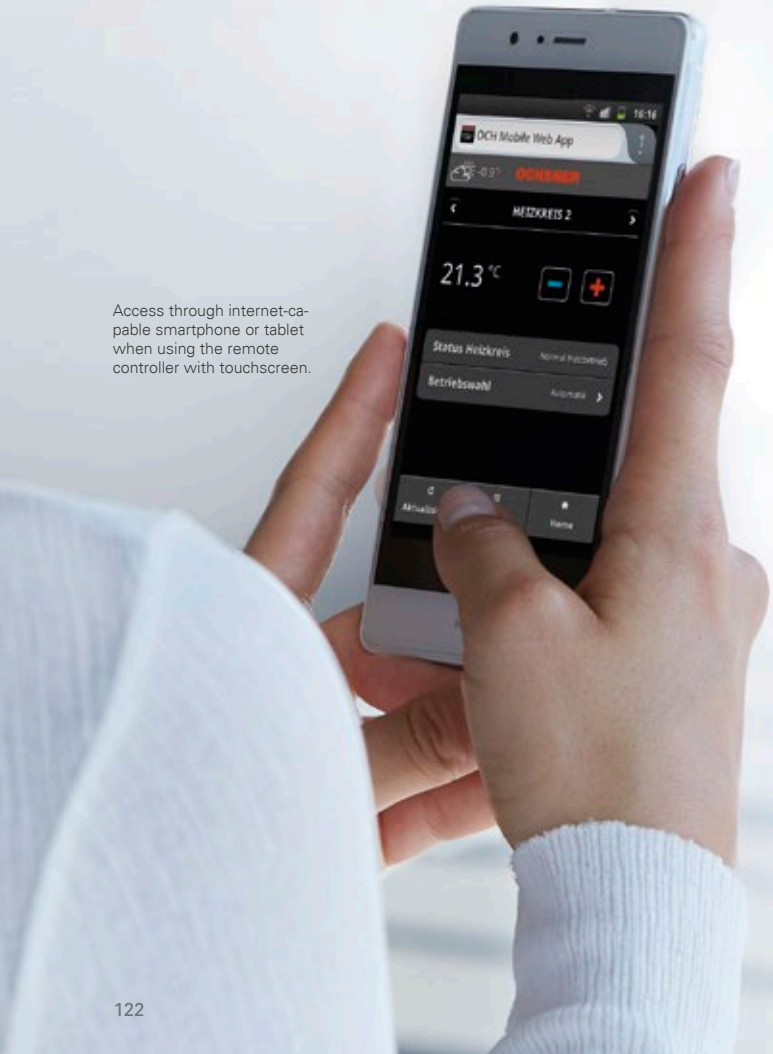
[1] A separate assembly is required for the DHW charging pump (allows a high efficiency pump to be controlled as a DHW charging pump, in addition to the 3-way switching module)
[2] In case of air/water heat pumps for two heating circuits
[3] External power supply required for the repeater (230 VAC)
[4] No extra gateway is required for each additional room temperature sensor or room temperature and humidity sensor.
[5] Scope of functions available from 2nd quarter 2020
[6] Scope of functions available from 4th quarter 2020

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 with optional touchscreen
- **System configurator** for simple system configuration
- **Safety management system** (alarm/fault/outage) for optimal operational safety
- **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 meters fitted as standard
- **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.
- **Building management system** with brine or water as heat source via an additional **auxiliary module SE 6304 OTE** for 0-10 V signal possible (if the heat source is air or with direct evaporation, possible as standard without auxiliary module)



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

CONTROL ELEMENTS

MASTER CONTROLLER
in control panel of heat pump

Illustrative photo

REMOTE CONTROLLER WITH TOUCHSCREEN
Capacitive touchscreen with integral web2com server – available as an option!

Order no. 918255

Illustrative photo

REMOTE CONTROLLER
with graphic display and humidity sensor (white)

Order no. 918357

Illustrative photo

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

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 auxiliary modules for up to
Heat generator	1	1	8
Heating circuit (direct)	1	–	1
Heating circuit (mixed) for heating/cooling	1	2[3]	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 maximum
Heat generator	2	2	1	**8**
Heating circuit (direct)	1	1	–	**1**
Heating circuit (mixed) for heating/cooling	1	1	2[3]	**15**
DHW circuit	1	1	1	**8**

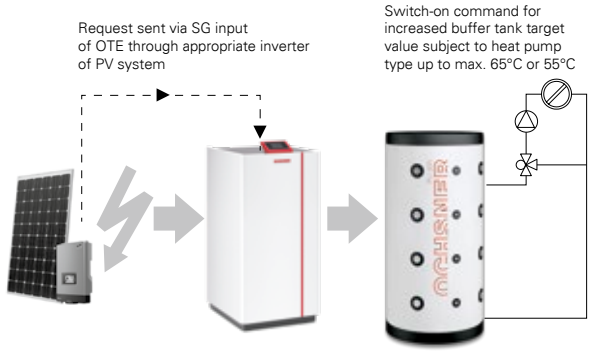
OPTIONAL ACCESSORIES

	Order no.	Price €
Remote controller FB 6104 RH with graphic display and humidity sensor [1], white	918357	**273,-**
Remote controller with touchscreen and integral web2com server	918255	**891,-**
Room temperature and humidity sensor FT 6224	930303	**206,-**
Room temperature sensor FT 6204	930174	**90,-**
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	**634,-**
Surcharge for passive cooling with WQA water including FB 6104 RH and contact sensor [2]	980155	**323,-**
Control unit for central heat source pump for cascading GMWW/OWWP, 1 pce per cascade	290526	**99,-**
Switching relay for 1x buffer heating and 1x buffer cooling or buffer cross-connection	290503	**162,-**

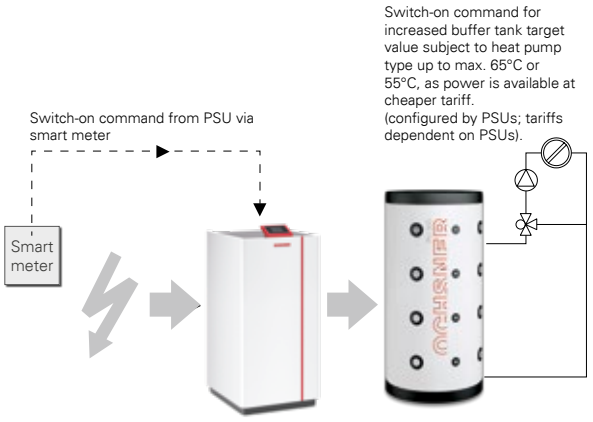
[1] Included in surcharge for heat pump heating/cooling for 1st mixed circuit. An additional room remote control (918357) is required for every further cooling circuit (mixed circuit).
[2] For passive cooling (without active cooling), an additional remote control (918357) is required for every further cooling circuit (mixed circuit) from the 2nd cooling circuit onwards.
[3] 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.

STANDARD OPERATION
SMART GRID FUNCTION NOT ACTIVE

OPERATION USING PV POWER GENERATED ON SITE



SMART GRID OPERATION WITH SURPLUS POWER FROM RENEWABLE ENERGY

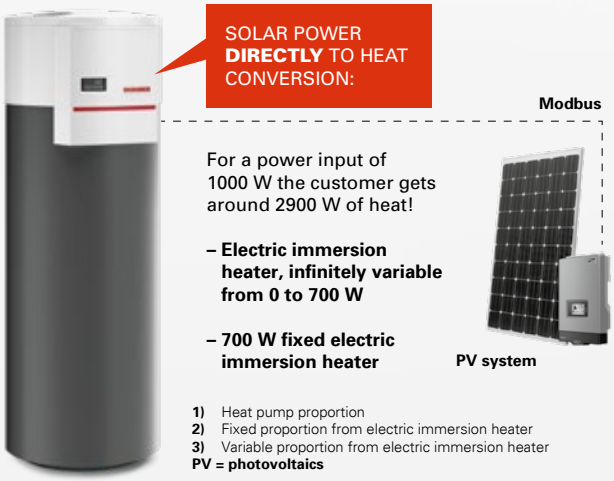


ENGINEERING AND INSTALLATION INFORMATION

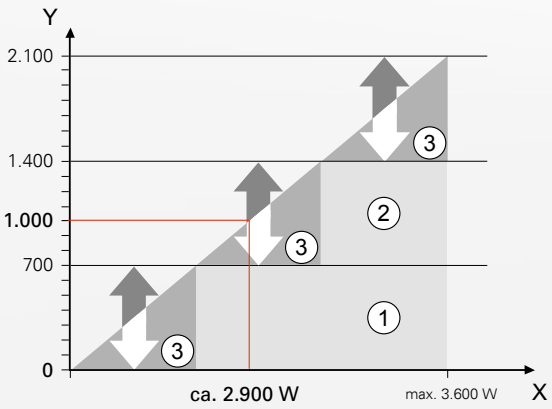
ENGINEERING OF HOT WATER HEAT PUMPS

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



1) Heat pump proportion
2) Fixed proportion from electric immersion heater
3) Variable proportion from electric immersion heater
PV = photovoltaics



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

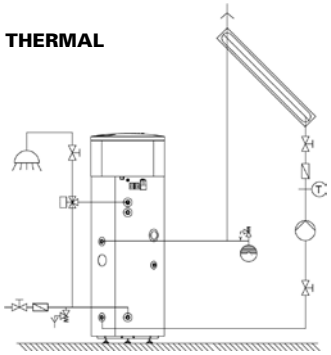
GENERAL INFORMATION ABOUT EUROPA HOT WATER HEAT PUMPS

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).

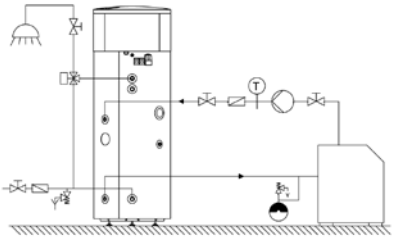
Depending on requirements, DHW heat pumps can be installed in both new and existing systems for optimum and economical DHW heating.

- The output and/or COP of the heat pumps is dependent on air temperature, air flow and humidity.
- Performance figures: Constructional tolerance of ±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.

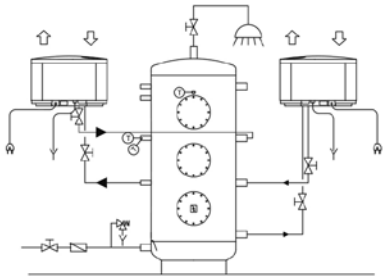
CONNECTION TO A SOLAR THERMAL SYSTEM:
- EUROPA 333 Genius
- EUROPA 250 DK (on-site solar controller required)



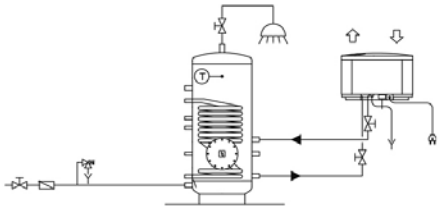
CONNECTION TO A BOILER:
- EUROPA 333 Genius
- EUROPA 250 DK



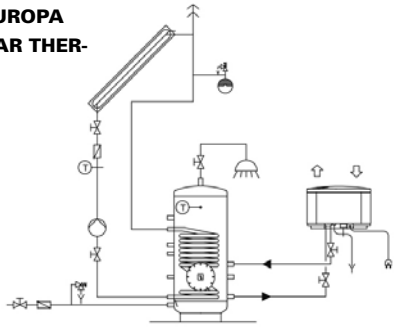
TWIN SOLUTION
- EUROPA Mini IWP
- EUROPA Mini IWPL



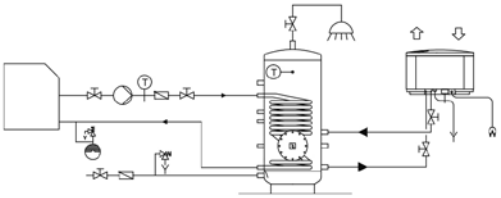
DHW TANK WITH EUROPA MINI IWP/IWPL AND VARIOUS HEAT SOURCES



DHW TANK WITH EUROPA MINI IWP AND SOLAR THERMAL SYSTEM



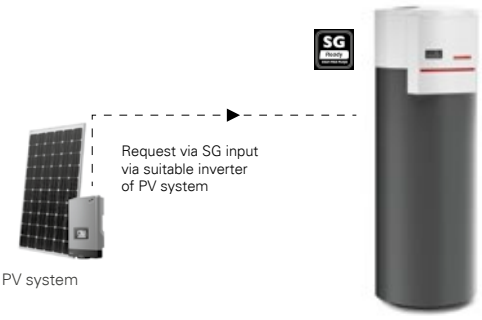
DHW TANK WITH EUROPA MINI IWP AND BOILER



EXAMPLES OF APPLICATION

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

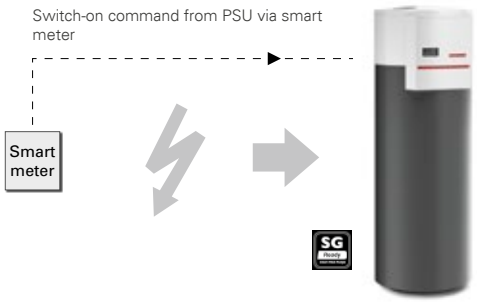
- EUROPA 333 Genius
- EUROPA 300L
- EUROPA Mini IWP



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

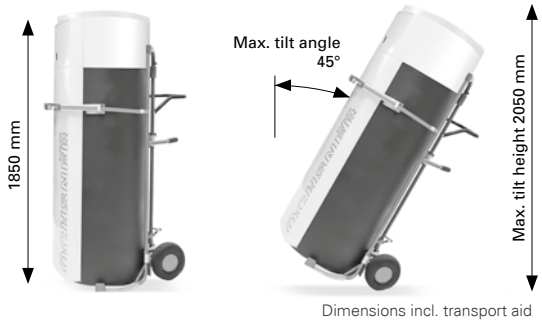
SMART GRID OPERATION WITH SURPLUS POWER FROM RENEWABLE ENERGY:

- 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).

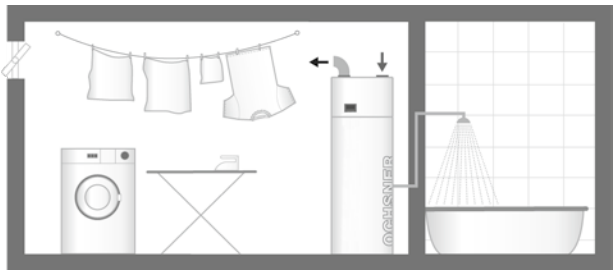
TRANSPORT AID FOR EUROPA DHW HEAT PUMPS



Dimensions incl. transport aid

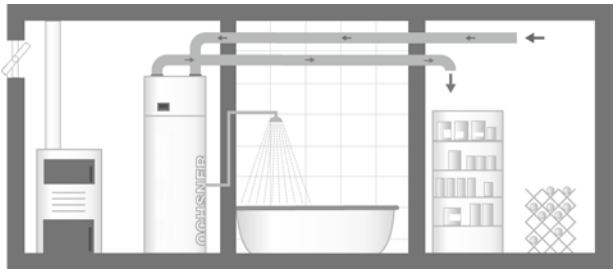
PV = photovoltaics
PSU = power supply utility
SG = smart grid

INSTALLATION IN A LAUNDRY ROOM



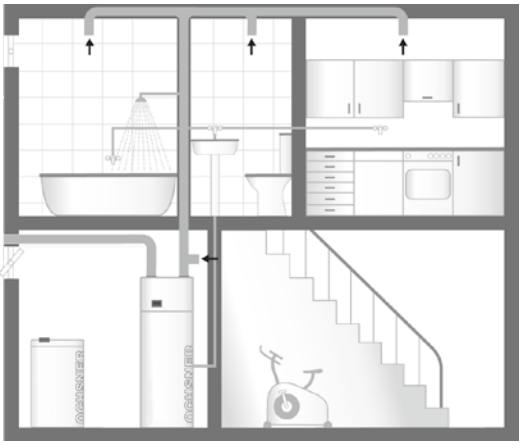
- No air routing
- The room air from the laundry room is drawn in and blown out
- Utilisation of waste heat from household appliances and dehumidification of room air

COOLING OF PANTRY/STORAGE ROOM



- The room air is drawn in from the storage room and blown out (recirculation air mode)
- Cooling effect and dehumidification of room air

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)

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.

SG Ready

ErP READY

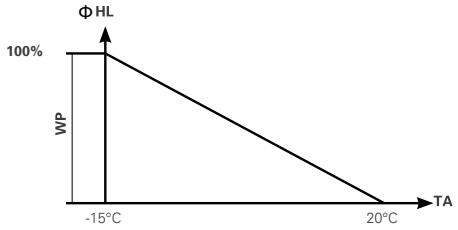
"CLIMATE" HEAT PUMP – HEATING/COOLING

- 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.

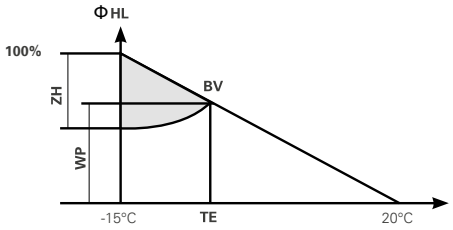
SIZING AND OPERATING PRINCIPLE OF HEATING HEAT PUMPS

The following operating modes are possible:

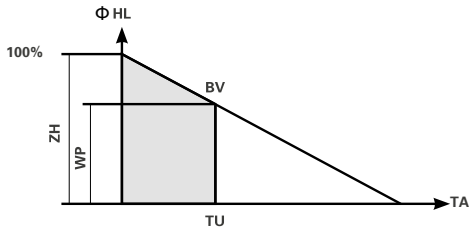
MONOVALENT
The heat pump is the only heat generator. The heat pump covers 100% of the heat demand at all times. Suitable for flow temperatures of up to 55°C or 65°C. Systems with ground or water as the heat source are operated in monovalent mode (max. design temperature of heat distribution system 50°C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



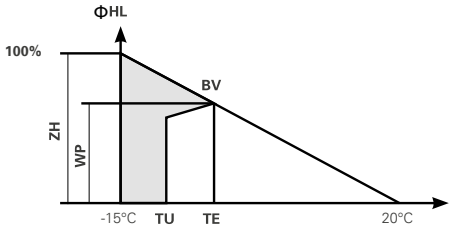
BIVALENT – PARALLEL
The heat pump provides heat on its own up to the switch-on point. Once this point has been passed, the heat pump provides heat together with the boiler or the electric immersion heater. Max. flow temperature 65°C Used predominantly in new systems with air as the heat source or when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



BIVALENT – 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.



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.



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 = booster heater switch-on point
TU = HP switch-off point
BV = bivalent point

Notes on noise

Heat pump installation room: not next to living areas, not in lightweight 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.

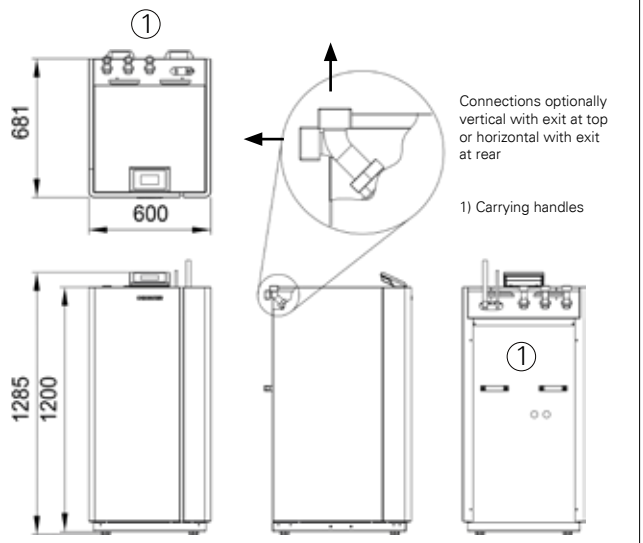
SERIES M2 AND M4
THE NEW GENERATION

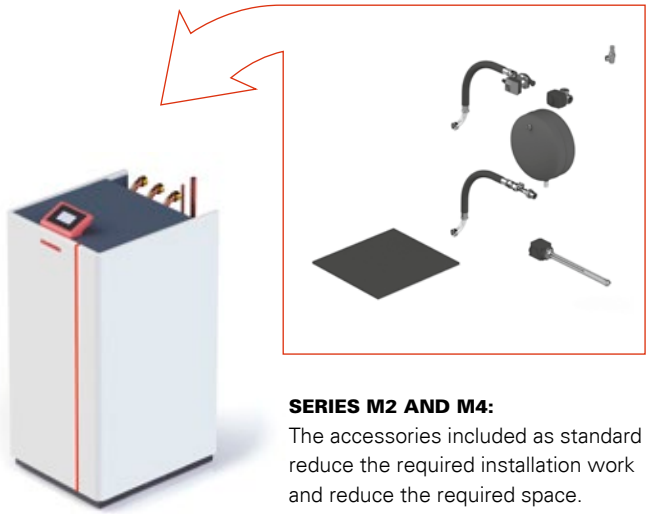
INTEGRATED AS STANDARD IN M2 SERIES:
- Flexible hoses
- Flow meters (WNA, WQA)
- Circuit pumps (WNA, WQA)
- Safety valves (WNA, WQA)
- Diaphragm expansion vessel, 24 litres (WNA, WQA)
- Drain and fill valves

INTEGRATED AS STANDARD IN M4 SERIES:
- Flexible hoses
- Flow meters (WNA, WQA)
- Circuit pumps (WNA, WQA)
- Safety valves (WNA, WQA)
- Diaphragm expansion vessel, 24 litres (WQA only)
- Drain and fill valves

OPTIONALLY AVAILABLE:
- Electric immersion heater (8.8 kW), internal
- 3-way switching module, internal

SERIES M2 AND M4

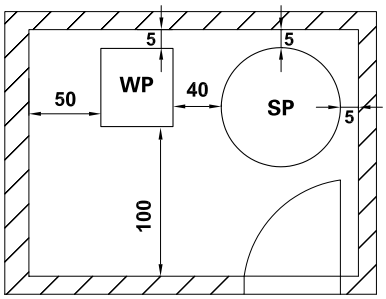




SERIES M2 AND M4:
The accessories included as standard reduce the required installation work and reduce the required space.

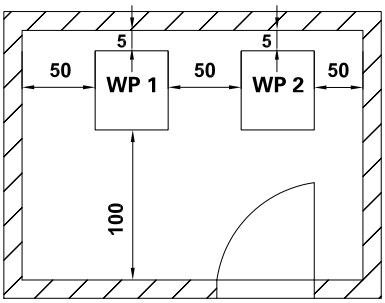
MINIMUM CLEARANCES FOR INDOOR UNIT INSTALLATION

M2/M4 series:



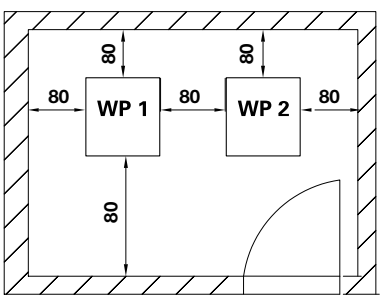
Min. room height 245 cm

M2/M4 series:



Min. room height 245 cm

M6 series



Min. room height 250 cm

WP) Heat pump
SP) Tanks

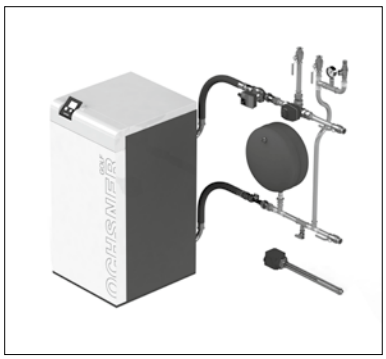
WQA) Heat source system
WNA) Heat sink system

GOLF SERIES

GOLF MIDI AND GOLF MAXI

IN SCOPE OF DELIVERY, TO BE INSTALLED ON SITE:

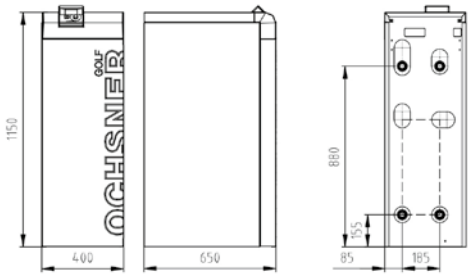
- Sound insulation underlay
- Flexible hoses
- Flow meters (WNA, WQA)
- Brine/water heat pumps:
  - Circulation pump (WNA, WQA), internal [1)]
  - Diaphragm expansion vessel (WQA), internal
  - Diaphragm expansion vessel (WNA) to be installed on site
  - Safety valve (WQA) to be installed on site
  - Pressure gauge (WQA) to be installed on site
- Water/water heat pumps:
  - Circulation pump (WNA), internal [1)]



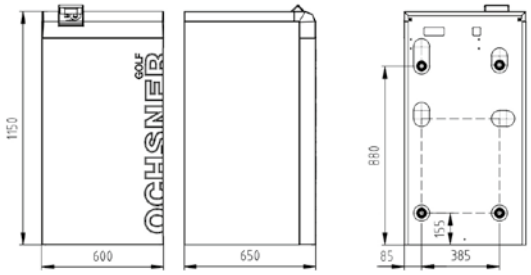
GOLF SERIES:
The accessories partly supplied with the product must be installed externally on site.

GOLF SERIES

GOLF MIDI

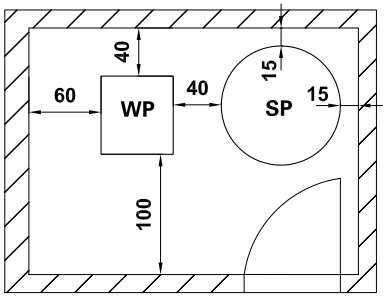


GOLF MAXI



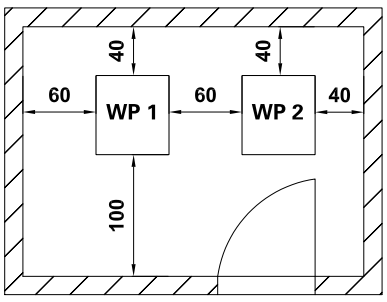
MINIMUM CLEARANCES FOR INDOOR UNIT INSTALLATION

GOLF Midi and GOLF Maxi series:



Min. room height 245 cm

GOLF Midi and GOLF Maxi series:



Min. room height 245 cm

Minimum clearances in cm

[1)] Not included in scope of delivery of GMSW 28 HK, GMSW 38 HK and GMWW 36

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.

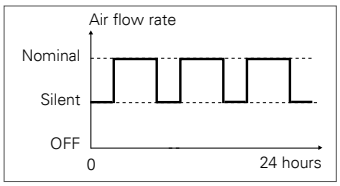
SUPER SILENT PACKAGE (SSP)

The Super Silent Package ensures an 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

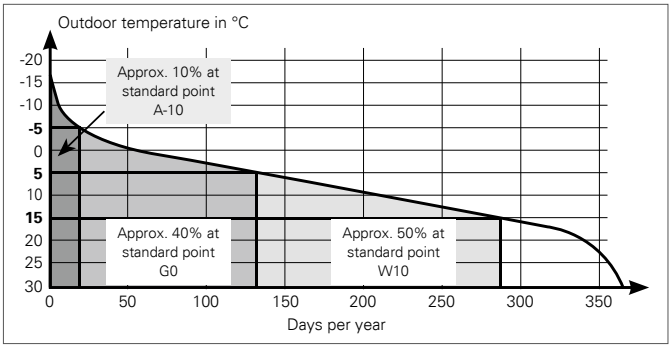
SILENT MODE

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.

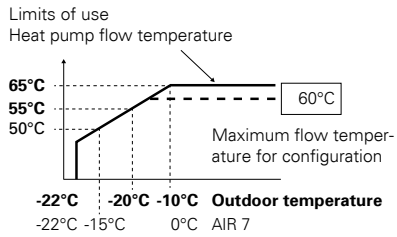
- A guide value for sizing the additionally required output in detached houses is **0.25 kW per person** in the household.
- For larger projects, such as apartment buildings or swimming pools, DHW heating must be sized separately according to actual demand. We would be pleased to advise you with any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

LIMITS OF USE

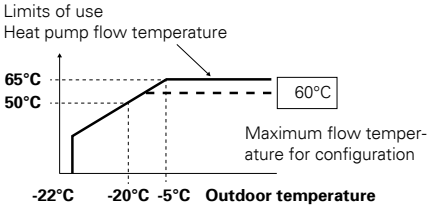
Model	AIR 7	AIR 11 - AIR 41	AIR 80
Outdoor temperature/max. heat pump flow temperature	A 0 / W 65°C A - 5 / W 60°C A - 15 / W 50°C	A - 10 / W 65°C A - 15 / W 60°C A - 20 / W 55°C	A - 7 / W 65°C A - 10 / W 60°C A - 15 / W 55°C
Underfloor heating (-15°C / 35°C)	YES	YES	YES
Radiators (-15°C / 55°C)	YES Auxiliary heater should be sized for 100% heat load	YES	-
Radiators (-15°C / 50°C)	-	-	YES
Radiators (-15°C / 65°C)	YES Auxiliary heater should be sized for 100% heat load	YES Auxiliary heater should be sized for 100% heat load	YES Auxiliary heater should be sized for 100% heat load
DHW	YES	YES	YES

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

AIR 7 – AIR 41 **65°C**



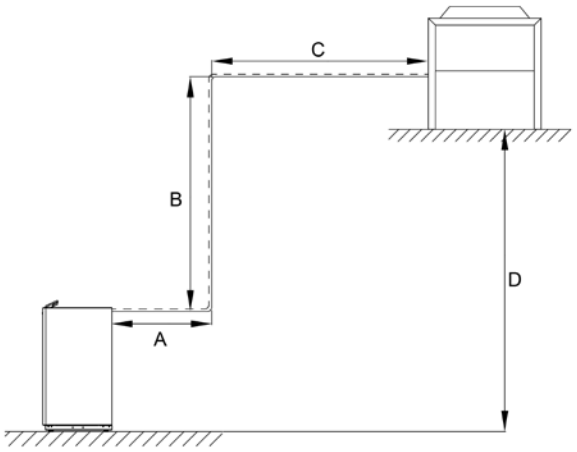
AIR 80 C13A / AIR 80 C22A **65°C**



LINE LENGTHS

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

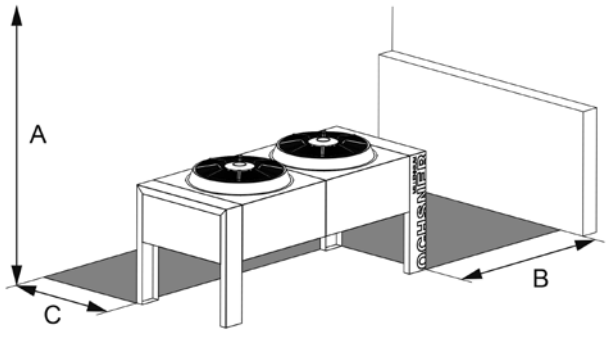
	A + B + C Sum of line lengths	D (max. height differential)
AIR 7 - AIR 29	≤ 20 m	≤ 10 m
AIR 41 - AIR 80	≤ 16 m	≤ 5 m



MINIMUM CLEARANCES FOR THE OUTDOOR UNIT

- 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 7 - 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)

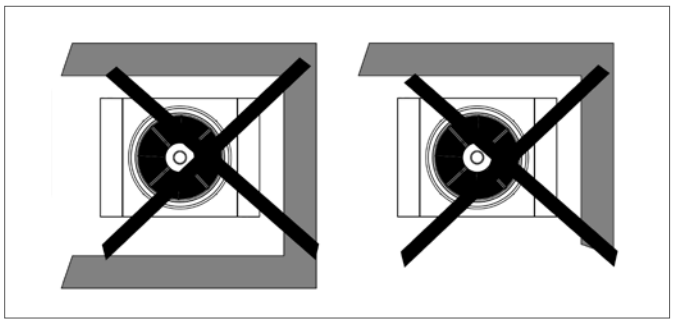


ENGINEERING AND INSTALLATION INFORMATION: AIR M2/M4

An excerpt from the operating and installation manual for AIR M2/M4 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.



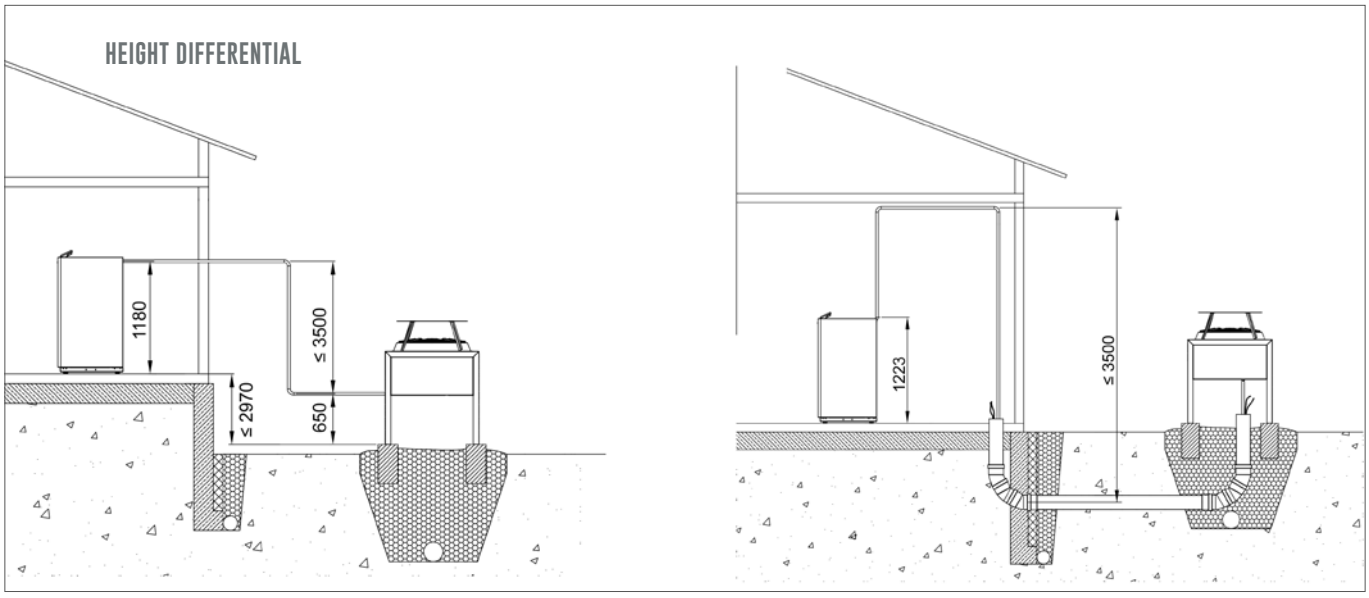
Please note the following with regard to sound emissions from the outdoor unit:

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

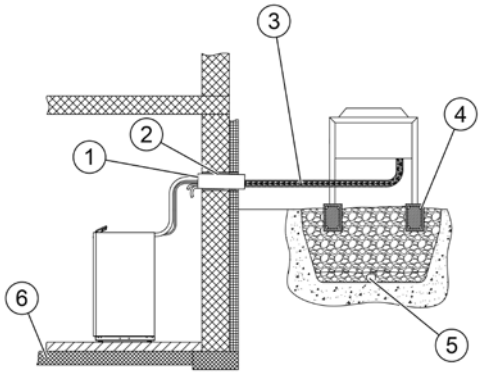
Plants and cultivated areas around the outdoor unit, subject to minimum clearances, can reduce the noise level of the outdoor unit.

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 a diameter of at least 150 mm and must be laid with a large bending radius (more than 1 m). 90° bends are not permitted.
- 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 such that the maximum permissible line lengths and height differentials are not exceeded.
- Avoid routing the lines in the vicinity of bedrooms. The refrigerant in the lines can generate noise under certain operational conditions.

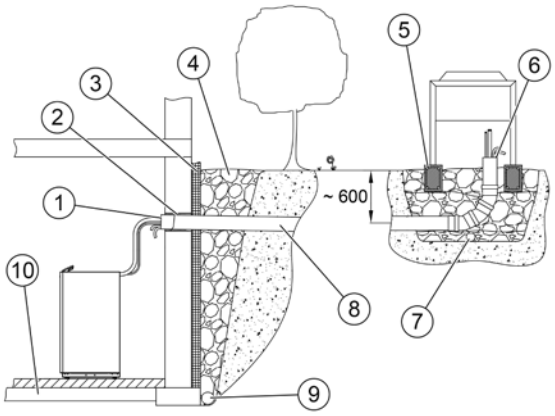


REFRIGERANT LINES PASSING THROUGH OPEN AIR



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

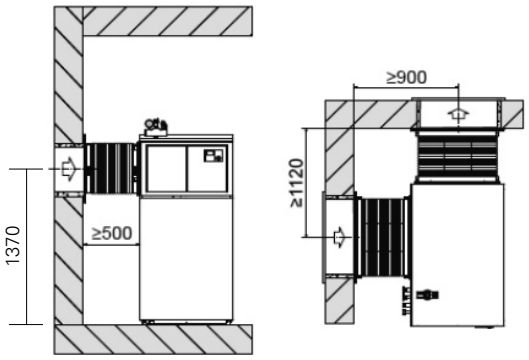


1) Appropriately sealed wall conduit
2) Appropriate sealing of the refrigerant lines as they pass through the pipe liner
3) Insulation
4) Gravel
5) Reinforced strip foundation
6) Appropriate sealing at the end of the pipe liner (between refrigerant lines and pipe liner)
7) Drainage pipe (frostproof)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

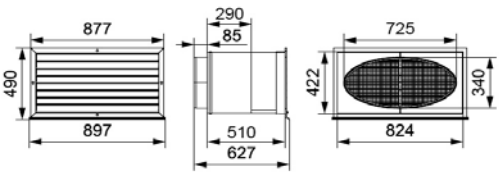
ENGINEERING AND INSTALLATION INFORMATION: AIR STATION

AIR STATION: INDOOR INSTALLATION

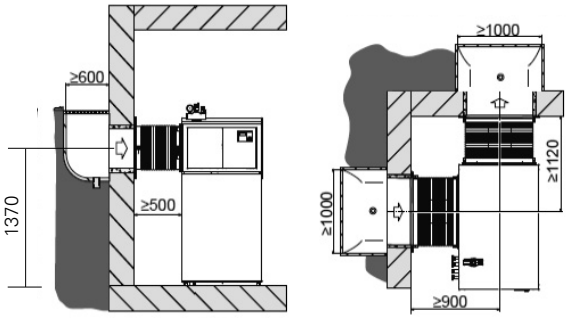
Air routing without shaft, through two external walls around one corner



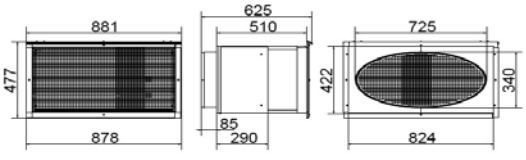
Wall conduit
AWG 560 H



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

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		AIR 7			AIR 11		
Connection dimension	[inch]	DN 32 1 1/4" male			DN 32 1 1/4" male		
Circulation pump, WNA		Yonos Para HPS 25/7.5			Yonos Para HPS 25/7.5		
		internal			internal		
Pump delivery head	[mbar]	766	776	783	651	762	774
Spread at A2/W35	[K]	5	7	10	5	7	10
Flow rate	[m³/h]	1,1	0,79	0,55	1,7	1,21	0,85
		100%	70%	50%	100%	70%	50%
Internal pressure loss M2-1; M4-1	[mbar]	109	56	27	205	104	51
Internal pressure loss M4-4	[mbar]	-	-	-	-	-	-
Residual head I M2-1; M4-1	[mbar]	657	720	756	446	658	722
Residual head I M4-4 for cascade	[mbar]	-	-	-	-	-	-
Additional 3-way switching module	[mbar]	External DN 32 kvs 16			External DN 32 kvs 16		
Pressure loss	[mbar]	5	2	1	11	6	3
Residual head II M2-1 or M4-1	[mbar]	652	718	754	435	652	719
Residual head II M4-4 for cascade	[mbar]	-	-	-	-	-	-
External PHE for DHW		PHE 2007 A=1" B=1"			PHE 2007 A=1" B=1"		
Primary pressure loss, side A (HP)	[mbar]	64	33	16	65	33	16
Secondary pressure loss, side B (DHW)	[mbar]	71	36	18	72	37	18
Residual head III heating	[mbar]	586	684	738	374	621	704
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	588	685	738	370	619	703
Residual head III M4-4	[mbar]	-	-	-	-	-	-

LIMITS OF USE

Unit type		AIR 7			AIR 11		
		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
tf-max WNA heating	[°C]	60	60	60	60	60	60
tf-max DHW A2/W65	[°C]	60	59	57	60	59	57
tf-max HP cooling	[°C]	7	10	13	7	10	13
tf-min WNA cooling	[°C]	9	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	-20°C			-23°C		
	50°C	-15°C			-23°C		
MT heating	55°C	-10°C			-20°C		
HT heating or DHW	60°C	-5°C			-15°C		

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

WNA = heat sink system
NT = 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		
Circulation pump, WNA		Yonos Para HPS 25/7.5				Stratos Para 25/1-8		
		internal				internal		
Pump delivery head	[mbar]	499	611	690	766	686	728	726
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 DN 32 kvs 16				External DN 40 kvs 25		
Pressure loss	[mbar]	19	13	10	5	18	9	5
Residual head II M2-1 or M4-1	[mbar]	156	372	515	680	338	551	638
Residual head II M4-4 for cascade	[mbar]	-	-	-	-	434	600	662
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
Residual head III heating	[mbar]	149	368	512	678	308	536	631
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	136	359	505	675	301	532	629
Residual head III M4-4	[mbar]	-	-	-	-	397	581	653

LIMITS OF USE

Unit type		**AIR 18**				**AIR 23**		
		5K	6K	7K	10 K	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			
Circulation pump, WNA		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 DN 40 kvs 25			External DN 50 kvs 40			
Pressure loss	[mbar]	31	16	8	23	16	11	6
Residual head II M2-1 or M4-1	[mbar]	82	462	603	87	466	710	925
Residual head II M4-4 for cascade	[mbar]	242	543	643	384	673	862	999
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
Residual head III heating	[mbar]	33	437	591	19	420	675	909
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	20	431	588	22	421	676	909
Residual head III M4-4	[mbar]	180	512	628	319	628	828	983

LIMITS OF USE

Unit type		AIR 29			AIR 41			
		5K	7K	10K	5K	6K	7K	10 K
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
WW = domestic hot water

WNA = heat sink system
NT = 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	
Circulation pump, WNA			Stratos Para 65/1-12	
			external	
Pump delivery head	[mbar]	930	1000	1000
Spread at A2/W35	[K]	5	7	10
Flow rate	[m³/h]	13	9,29	6,50
		100%	70%	50%
Internal pressure loss M2-1; M4-1	[mbar]	-	-	-
Internal pressure loss M4-4	[mbar]	312	159	78
Residual head I M2-1; M4-1	[mbar]	-	-	-
Residual head I M4-4 for cascade	[mbar]	618	841	922
Additional 3-way switching module	[mbar]		External DN 50 kvs 40	
Pressure loss	[mbar]	106	54	26
Residual head II M2-1 or M4-1	[mbar]	-	-	-
Residual head II M4-4 for cascade	[mbar]	513	787	896
External PHE for DHW			PHE 9610 A=2″ B=2″	
Primary pressure loss, side A (HP)	[mbar]	16	37	18
Secondary pressure loss, side B (DHW)	[mbar]	69	35	17
Residual head III heating	[mbar]	549	806	905
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	-	-	-
Residual head III M4-4	[mbar]	441	750	878

LIMITS OF USE

Unit type		**AIR 80 C13A / 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

(in particular for Austria)

The single-phase AIR EAGLE, AIR BASIC, AIR HAWK and AIR FALCON heat pump models are equipped with a single-phase inverter with a rating > 1.3 kVA.
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, the operation of these units is only permitted with the written approval of the grid operator.
The TAEV is valid for all of Austria. Compliance with the limits is, however, 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 an approval from the grid network operator via a licensed electrical engineer.
Provide confirmation that the grid operator has approved the operation of the system at the intended location by ticking the appropriate box on the supplementary datasheet for the heat pump.

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)

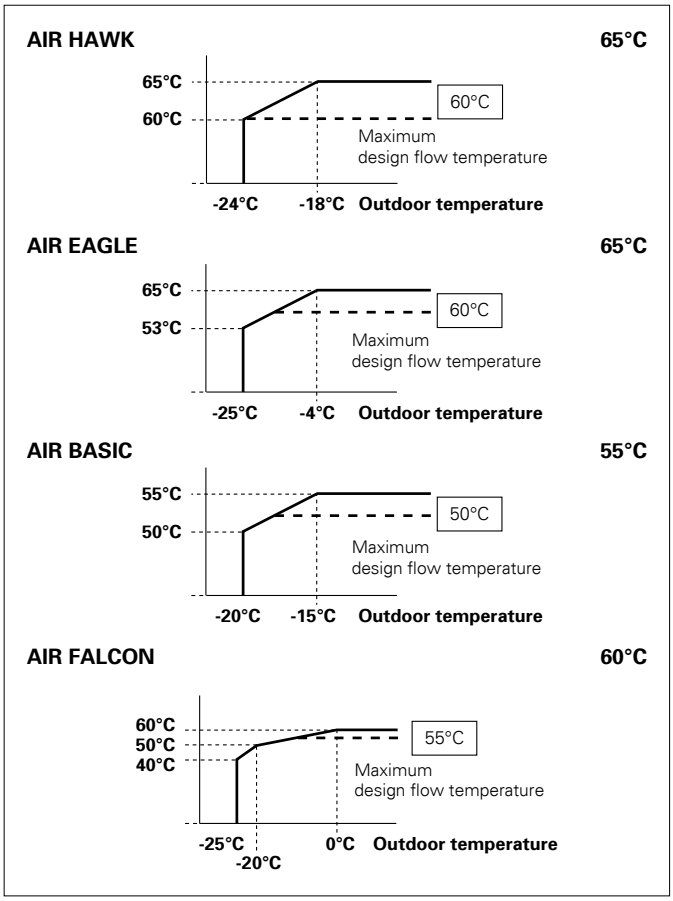
OCHSNER outdoor units lie some way below these values. The sound pressure level measured at 1 m distance in a free field is approx. 8 dB below the sound power level. Here, the sound pressure level decreases by approx. 2 dB(A) per metre. Observe the information in the TA-Lärm (technical instructions on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

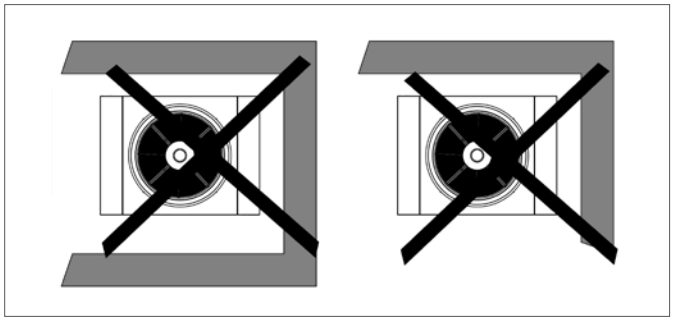


ENGINEERING AND INSTALLATION INFORMATION: AIR EAGLE

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:

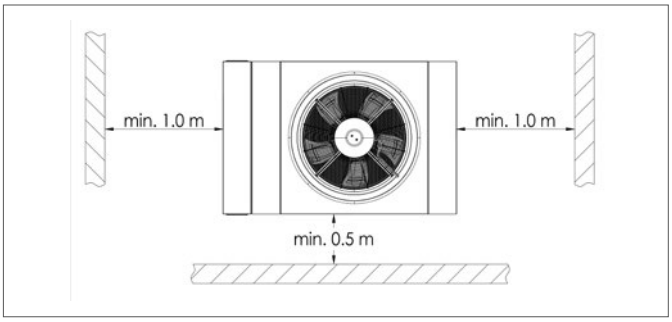
- Avoid installing on reverberant flooring.
- Avoid installing between building walls. Walls can increase the noise level.
- Avoid installing next to bedrooms.
- We recommend installation in a free field (not near walls) to minimise sound emissions. Installing parallel to a wall increases noise reflections. 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.

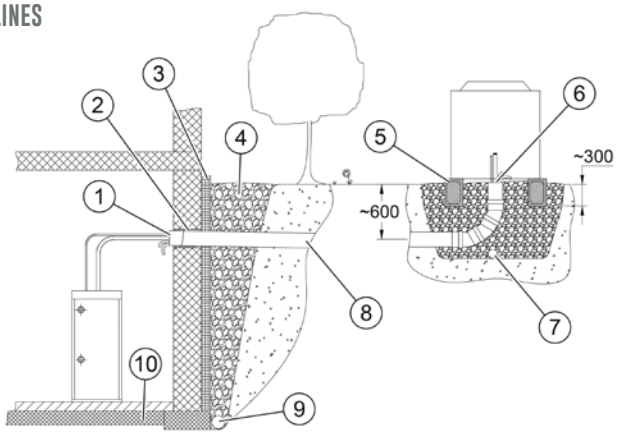
LINE LENGTHS AND HEIGHT DIFFERENTIALS

Max. connection length and height difference:		
EAGLE	L ≤ 25 m	H ≤ +/- 15 m

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 BASIC AND 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

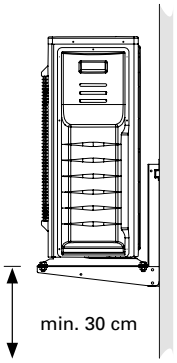
The outdoor unit is intended to be installed only out of doors.

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.

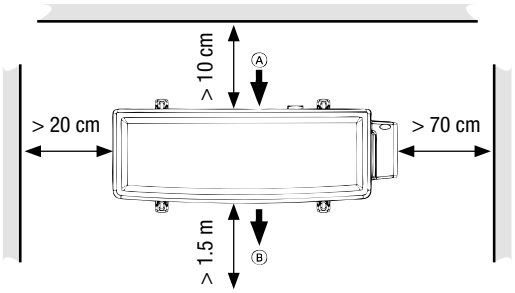
If installing on wall brackets, bear in mind that noise levels will be higher!



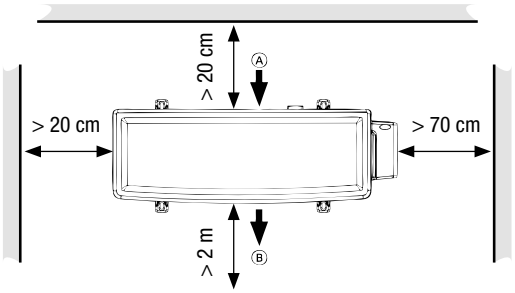
LINE LENGTHS AND HEIGHT DIFFERENTIALS

Max. connection length and height difference:		
AIR FALCON 212	L ≤ 20 m	H ≤ +/- 15 m
AIR BASIC 211 / 416 / 618	L ≤ 20 m	H ≤ +/- 15 m
AIR BASIC 109	L ≤ 20 m	H ≤ +/- 10 m

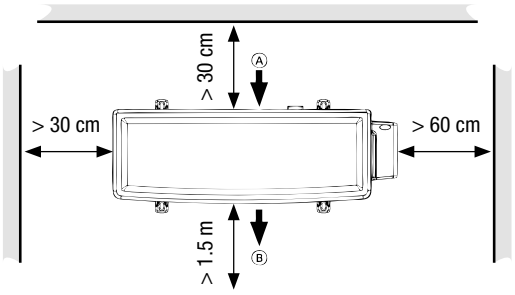
AIR BASIC 109, AIR BASIC 211



AIR BASIC 416, AIR BASIC 618



AIR FALCON 212

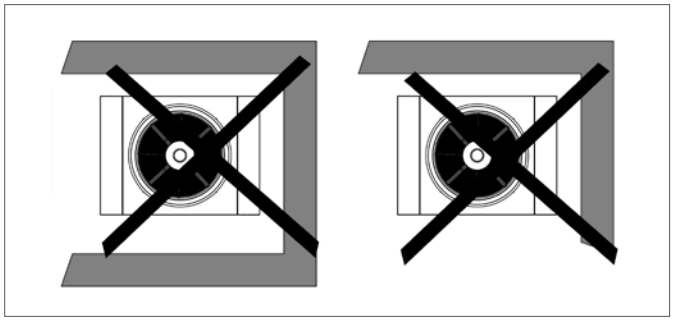


ENGINEERING AND INSTALLATION INFORMATION: AIR HAWK

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.

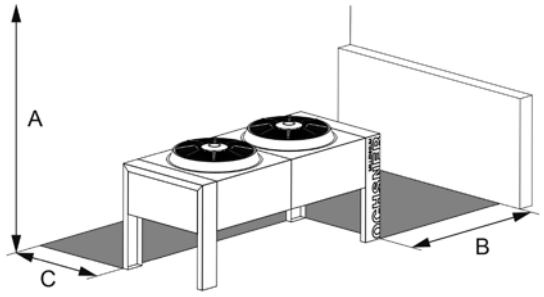
CONNECTION LINES BETWEEN INDOOR AND OUTDOOR UNITS

- 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 a diameter of at least 150 mm and must be laid with a large bending radius (more than 1 m). 90° bends are not permitted.
- 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 such that the maximum permissible line lengths and height differentials are not exceeded.
- 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

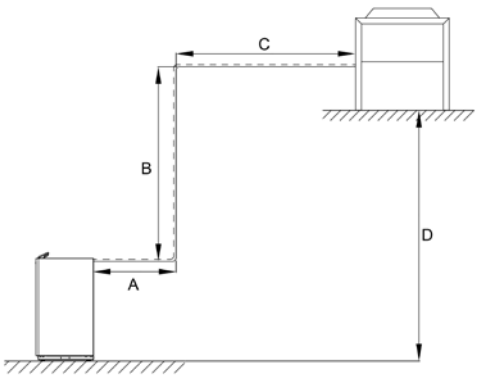
A	≥ 3000 mm (minimum clearance to roof)
B	≥ 1000 mm (minimum clearance to a wall)
C	100 mm or ≥1000 mm (minimum clearance to a wall from the long side)



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.

	A + B + C Sum of line lengths	D (max. height differential)
AIR HAWK 208	≤ 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
		[m³/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)	PU 1000		DN 65

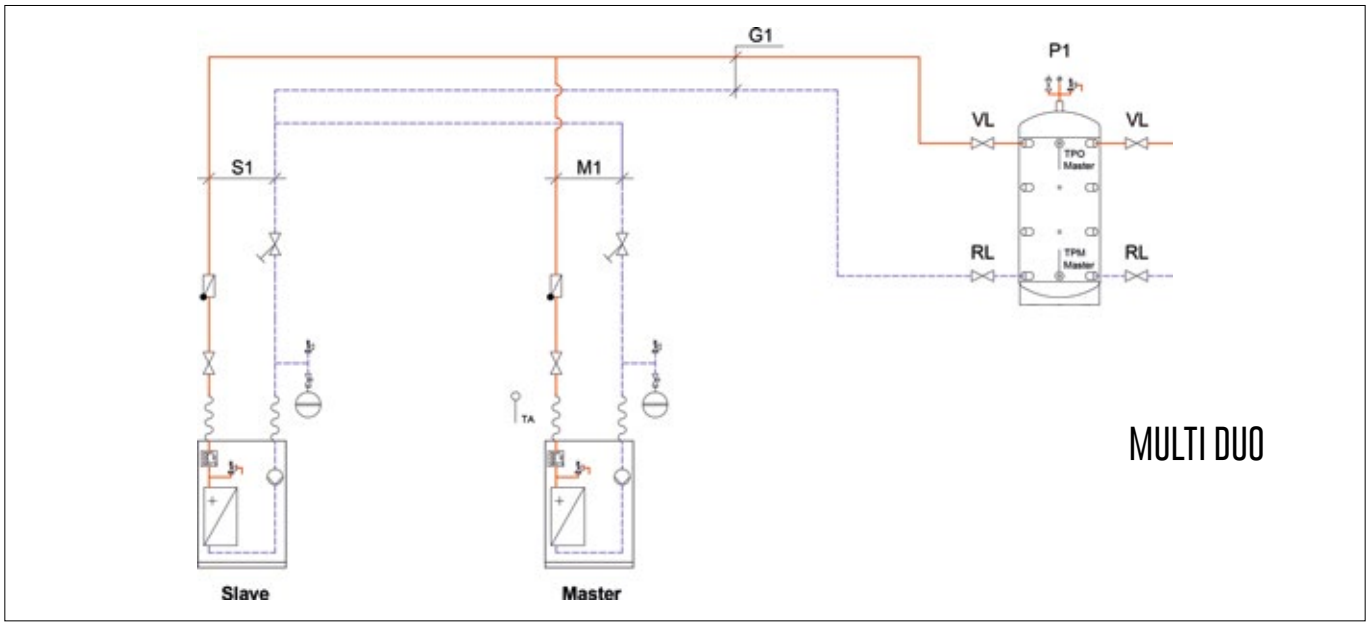
CASCADE TRIO

Unit type		AIR MULTI TRIO 123	
Order no.		290841	
	Unit type	Flow rate	Pipe diameter
		[m³/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)	PU 1500		DN 80

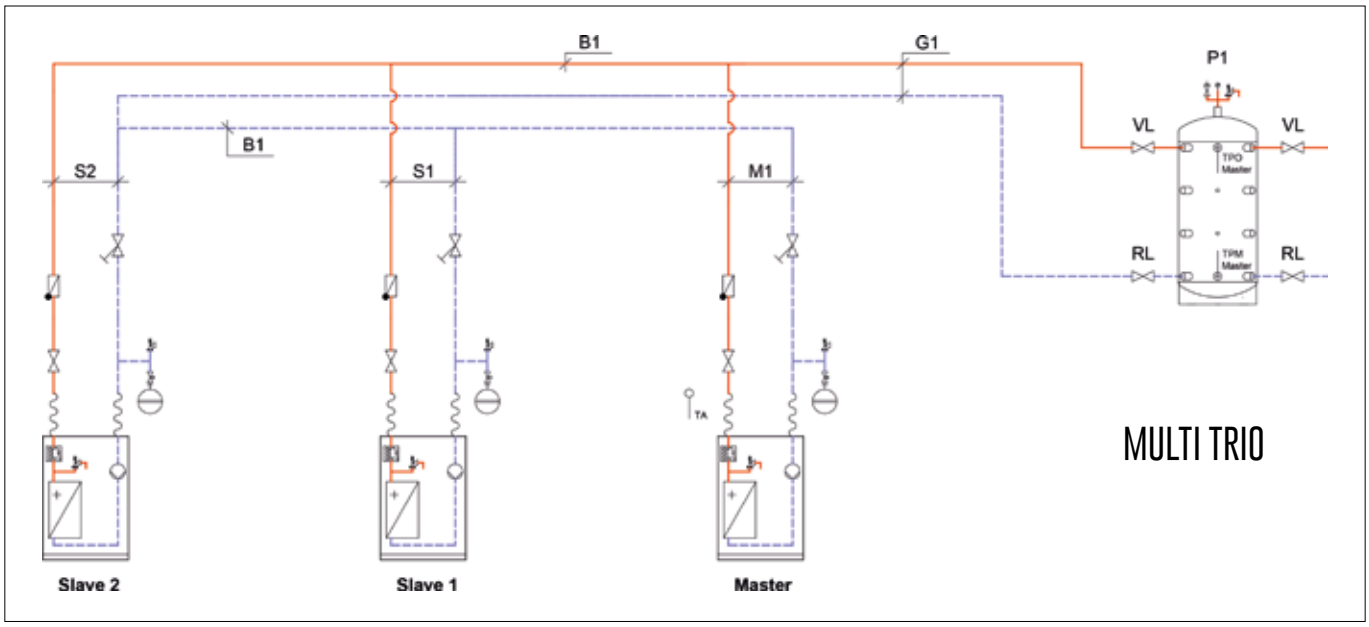
CASCADE QUATTRO

Unit type		AIR MULTI QUATTRO 164	
Order no.		290842	
	Unit type	Flow rate	Pipe diameter
		[m³/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)	PU 1500		DN 80

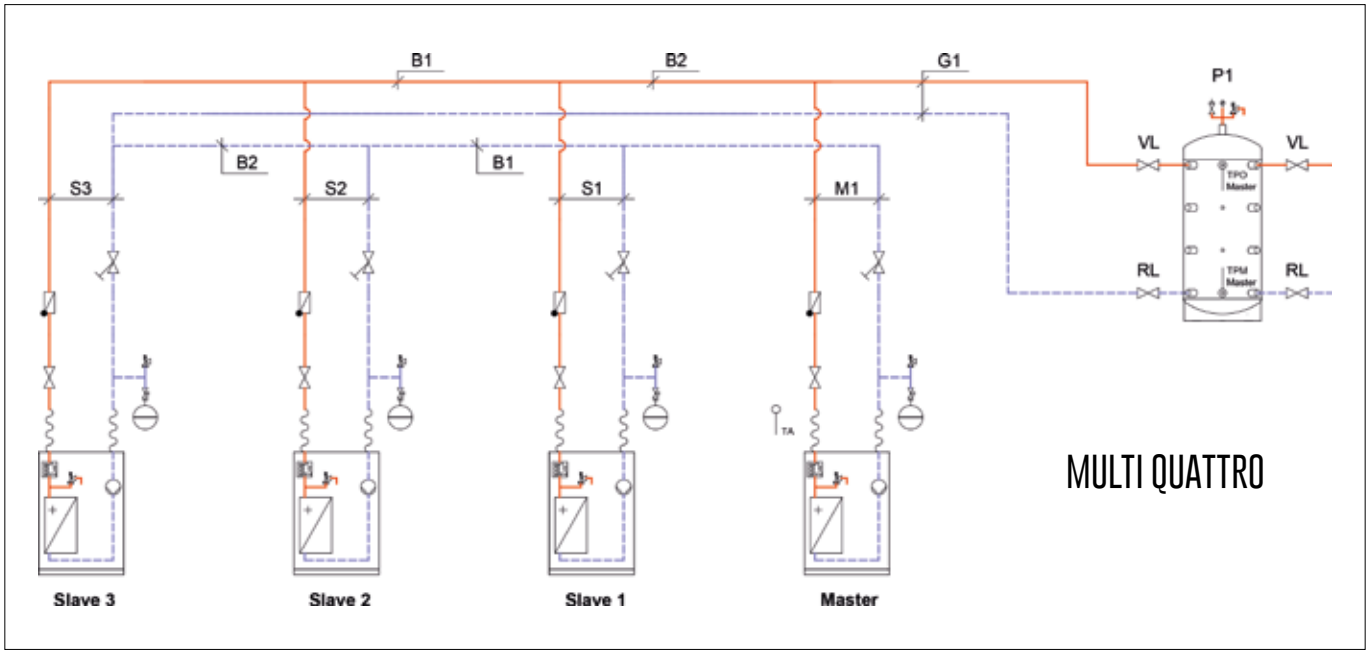
Note: The given flow rates and pipe diameters are guide values. A system-specific layout is required.
P1: Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



MULTI DUO



MULTI TRIO



MULTI QUATTRO

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

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 routing 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 [1)]

Soil conditions	Max. spec. extraction capacity at 1800 h/a [W/m²]	Max. spec. extraction capacity at 2400 h/a [W/m²]
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 [1)]

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 GEOTHERMAL PROBES [1)]

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® based on propylene glycol is mixed with environmentally friendly corrosion inhibitors and complies with foodstuff compatibility standard LD 0.

SIZING:

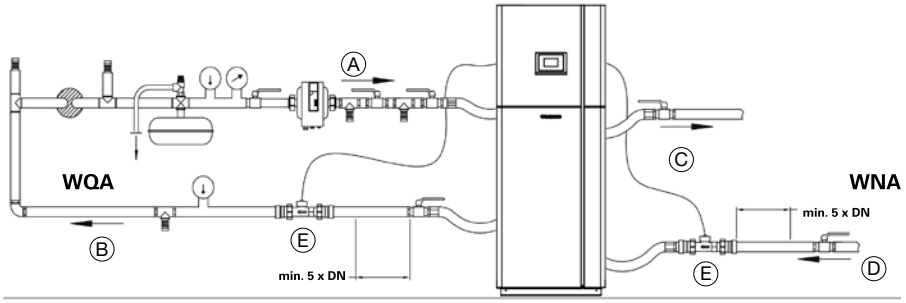
- For slightly turbulent flow conditions with ethylene glycol, the flow rate per collector should be 0.6-0.8 m³/h.
- Where geothermal probes are used, we recommend the use of duplex probes.
- Depending on conditions, simplex probes can also be used; these are to be calculated individually when designing the system.

[1)] 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

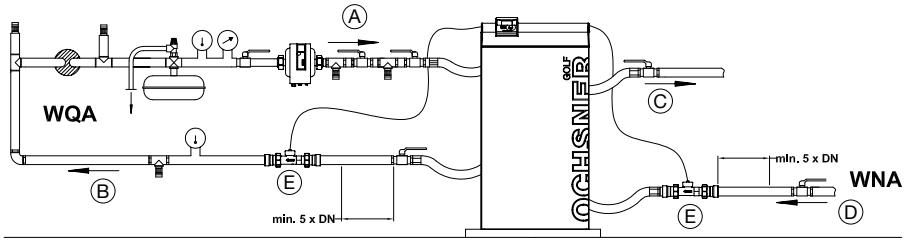
WQA) Heat source system
WNA) Heat sink system



HYDRAULIC CONNECTION FOR TERRA GOLF

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 routing, 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 sensor

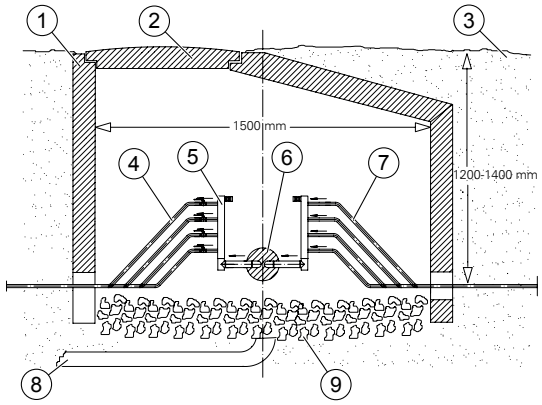
THE BRINE COLLECTOR SETS CONSIST OF

- 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/M6

FOR GROUND SOURCE HEAT PUMPS (BRINE)

			M2			M4
Unit type		**TERRA 6**	**TERRA 8**	**TERRA 11**	**TERRA 14**	**TERRA 18**
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 40 1 1/2" male
WQA circulation pump		Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-12
		internal	internal	internal	internal	internal
Operating point		B0/W35	B0/W35	B0/W35	B0/W35	B0/W35
Spread	[K]	3	3	3	3	3
Flow rate	[m³/h]	1,45	1,87	2,59	3,28	4,15
PHE pressure loss – internal	[mbar]	-	-	-	-	-
Flow meter		internal	internal	internal	internal	internal
Flow meter pressure loss	[mbar]	-	-	-	-	-
Residual head I	[mbar]	589	579	505	421	737

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**	**ESK 8**
Brine distributor		DN 40x1 1/2" fem. for 3 circuits kvs 12	DN 40x1 1/2" fem. for 4 circuits kvs 12	DN 40x1 1/2" fem. for 6 circuits kvs 12	DN 50x2" fem. for 7 circuits kvs 30	DN 50x2" fem. for 8 circuits kvs 30
Brine distributor pressure loss	[mbar]	15	24	47	12	19
Brine collector		at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0
Geothermal collector pressure loss	[mbar]	40	37	32	37	46
Number of collectors		3	4	6	7	8
Recommended installation areas	[m²]	180	230	380	470	540
Residual head II (HP + collector set)	[mbar]	534	518	426	372	672
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions						
System content, WQA	[litres]	255	331	499	573	674
Connection line 2x20 lm		DN 32-PE 40x3.7	DN 32-PE 40x3.7	DN 40-PE 50x4.6	DN 40-PE 50x4.6	DN 50-PE 63x5.8
Ethylene glycol 25% canister 25 l	[pce]	3	4	5	6	7
Propylene glycol 32% canister 25 l	[pce]	4	5	7	8	9

EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		**1x100 m**	**2x80 m**	**2x100 m**	**3x100 m**	**4x80 m**
Pressure loss in probe	[mbar]	199	66	159	113	81
Brine distributor		DN 40 x1 1/2" fem. for 2 circuits kvs 12	DN 40 x1 1/2" fem. for 4 circuits kvs 12	DN 40 x1 1 1/2" fem. for 4 circuits kvs 12	DN 40 x1 1/2" fem. for 6 circuits kvs 30	DN 50x2" fem. for 8 circuits kvs 30
Pressure loss in distributor	[mbar]	15	24	47	12	19
Residual head II (HP + probe)	[mbar]	375	489	299	296	637
Connection line 2x20 lm		DN 32-PE 40x3.7	DN 32-PE 40x3.7	DN 40-PE 50x4.6	DN 40-PE 50x4.6	DN 50-PE 63x5.8
System content, WQA	[litres]	249	379	484	699	773
Ethylene glycol 25% canister 25 l	[pce]	3	4	5	7	8
Propylene glycol 32% canister 25 l	[pce]	4	5	7	9	10

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

		M4		M6	
Unit type		**TERRA 27**	**TERRA 40**	**TERRA 61**	**TERRA 76**
Connection dimension	[inch]	DN 40 1 1/2″ male	DN 50 2″ male	DN 50 2″ male	DN 50 2″ male
WQA circulation pump		Stratos Para 25/1-12	Stratos Para 40/1-12	Stratos Para 50/1-12	Stratos Para 65/1-12
		internal	external	external	external
Operating point		B0/W35	B0/W35	B0/W35	B0/W35
Spread	[K]	4	3	3	3
Flow rate	[m³/h]	4,75	9,99	15,11	18,82
PHE pressure loss – internal	[mbar]	-	90	120	150
Flow meter		internal	FM-DN 50 x 2″ fem. kvs 40	FM-DN 50 x 2″ fem. kvs 40	FM-DN 50 x 2″ fem. kvs 40
Flow meter pressure loss	[mbar]	-	62	143	221
Residual head I	[mbar]	523	757	595	544

EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		**ESK 14**	**ESKP 18**	**ESKP 30**	-
Brine distributor		DN 50x2″ fem. for 2x7 circuits kvs 30	DN 50x2″ fem. for 2x9 circuits kvs 30	DN 50x2″ fem. for 2x10 circuits kvs 30	DN 50x2″ fem. for 3x10 circuits kvs 30
Brine distributor pressure loss	[mbar]	7	28	28	44
Brine collector		at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0
Geothermal collector pressure loss	[mbar]	14	52	43	67
Number of collectors		14	18	30	30
Recommended installation areas	[m²]	900	1200	1980	1980
Residual head II (HP + collector set)	[mbar]	502	704	552	477
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions					
System content, WQA	[litres]	1123	1449	2431	2431
Connection line 2x20 lm		DN 50-PE 63x5.8	DN 60-PE 75x6.8	DN 70-PE 99x8.2	DN 70-PE 99x8.2
Ethylene glycol 25% canister 25 l	[pce]	12	15	25	25
Propylene glycol 32% canister 25 l	[pce]	15	19	32	32

EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		**5x100 m**	**7x100 m**	**12x100 m**	**12x100 m**
Pressure loss in probe	[mbar]	50	193	150	232
Brine distributor		DN 50x2″ fem. for 10 circuits kvs 30	DN 50x2″ fem. for 2x7 circuits kvs 30	DN 50x2″ fem. for 3x8 circuits kvs 30	DN 50x2″ fem. for 3x8 circuits kvs 30
Pressure loss in distributor	[mbar]	7	28	28	44
Residual head II (HP + probe)	[mbar]	466	536	417	267
Connection line 2x20 lm		DN 50-PE 63x5.8	DN 60-PE 75x6.8	DN 70-PE 99x8.2	DN 70-PE 99x8.2
System content, WQA	[litres]	1161	1628	2802	2802
Ethylene glycol 25% canister 25 l	[pce]	12	17	29	29
Propylene glycol 32% canister 25 l	[pce]	15	21	36	36

PHE = plate heat exchanger
WQA = heat source system
FM = flow meter
male = male thread
kvs = kvs value

SIZING THE HEAT SOURCE SYSTEM: TERRA GOLF

FOR GROUND SOURCE HEAT PUMPS (BRINE)

		GOLF MAXI PLUS				
Unit type		**GMSW 7 HK plus**	**GMSW 10 HK plus**	**GMSW 7 HK plus VX**	**GMSW 10 HK plus VX**	**GMSW 12 HK plus**
Connection dimension	[inch]	1 1/4″	1 1/4″	1 1/4″	1 1/4″	1 1/4″
WQA circulation pump		Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8	Stratos Para 25/1-8
		internal	internal	internal	internal	internal
Operating point		B0/W35	B0/W35	B0/W35	B0/W35	B0/W35
Spread	[K]	3	3	3	3	3
Flow rate	[m³/h]	1,7	2,5	1,5	2,3	2,9
PHE pressure loss – internal	[mbar]	170	214	150	201	180
Flow meter		FM-DN 20 x 1 1/4″ male kvs 10	FM-DN 20 x 1 1/4″ male kvs 10	FM-DN 20 x 1 1/4″ male kvs 10	FM-DN 20 x 1 1/4″ male kvs 10	FM-DN 20 x 1 1/4″ male kvs 10
Flow meter pressure loss	[mbar]	29	63	23	53	84
Residual head I	[mbar]	637	613	644	622	582

EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		**ESK 4**	**ESK 5**	**ESK 4**	**ESK 5**	**ESK 6**
Brine distributor		DN 40x1 1/2″ fem. for 4 circuits kvs 12	DN 40x1 1/2″ fem. for 5 circuits kvs 12	DN 40x1 1/2″ fem. for 4 circuits kvs 12	DN 40x1 1/2″ fem. for 5 circuits kvs 12	DN 40x1 1/2″ fem. for 6 circuits kvs 12
Brine distributor pressure loss	[mbar]	20	43	16	37	58
Brine collector		at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0
Geothermal collector pressure loss	[mbar]	31	42	24	36	40
Number of collectors		4	5	4	5	6
Recommended installation areas	[m²]	230	330	637	330	380
Residual head II (HP + collector set)	[mbar]	607	570	620	586	542
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions						
System content, WQA	[litres]	330	403	329	422	498
Connection line 2x20 lm		DN 32-PE 40x3.7	DN 40-PE 50x4.6	DN 32-PE 40x3.7	DN 40-PE 50x4.6	DN 40-PE 50x4.6
Ethylene glycol 25% canister 25 l	[pce]	4	5	4	5	5
Propylene glycol 32% canister 25 l	[pce]	5	6	5	6	7

EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		**2x80 m**	**2x100 m**	**2x80 m**	**2x100 m**	**3x80 m**
Pressure loss in probe	[mbar]	55	148	43	125	71
Brine distributor		DN 40 x1 1/2″ fem. for 4 circuits kvs 12	DN 40 x1 1/2″ fem. for 4 circuits kvs 12	DN 40 x1 1/2″ fem. for 4 circuits kvs 12	DN 40 x1 1/2″ fem. for 4 circuits kvs 12	DN 40 x1 1/2″ fem. for 6 circuits kvs 12
Pressure loss in distributor	[mbar]	20	44	16	37	59
Residual head II (HP + probe)	[mbar]	562	421	585	460	453
Connection line 2x20 lm		DN 32-PE 40x3.7	DN 32-PE 40x3.7	DN 32-PE 40x3.7	DN 40-PE 50x4.6	DN 40-PE 50x4.6
System content, WQA	[litres]	378	465	379	485	570
Ethylene glycol 25% canister 25 l	[pce]	4	5	4	5	6
Propylene glycol 32% canister 25 l	[pce]	5	7	6	7	8

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

GOLF MAXI

Unit type		GMSW 15 HK plus	GMSW 17 HK plus	GMSW 28 HK	GMSW 38 HK
Connection dimension	[inch]	1 1/4″	1 1/2″	1 1/2″	2″
WQA circulation pump		Stratos Para 25/1-12	Stratos Para 25/1-12	Stratos Para 30/1-12	Stratos Para 30/1-12
		internal	internal	external	external
Operating point		B0/W35	B0/W35	B0/W35	B0/W35
Spread	[K]	3	3	3	3
Flow rate	[m^3/h]	3,5	4	4,6	6,7
PHE pressure loss – internal	[mbar]	210	190	240	370
Flow meter		FM-DN 20 x 1 1/4″ male kvs 10	FM 25 x 1 1/2″ male kvs 20	FM 25 x 1 1/2″ male kvs 20	FM 50 x 2″ fem. kvs 40
Flow meter pressure loss	[mbar]	123	40	53	28
Residual head I	[mbar]	940	1022	973	782

EXAMPLE: SHALLOW OR DEEP TRENCH LAYING

Accessories for the heat source system optionally available.

Brine collector set		ESK 7	ESK 8	ESKP 10	ESKP 14
Brine distributor		DN 50x2″ fem. for 7 circuits kvs 30	DN 50x2″ fem. for 8 circuits kvs 30	DN 50x2″ fem. for 10 circuits kvs 30	DN 50x2″ fem. for 2x7 circuits kvs 30
Brine distributor pressure loss	[mbar]	14	18	24	12
Brine collector		at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0	at 120 lm PE-DN 25 32x2.0
Geothermal collector pressure loss	[mbar]	42	42	36	39
Number of collectors		7	8	10	14
Recommended installation areas	[m^2]	470	540	620	900
Residual head II (HP + collector set)	[mbar]	897	980	937	743
Pressure loss data referring to ethylene glycol 25% residual head II is for sizing the connection line according to actual conditions					
System content, WQA	[litres]	572	677	825	1121
Connection line 2x20 lm		DN 40-PE 50x4.6	DN 50-PE 63x5.8	DN 50-PE 63x5.8	DN 50-PE 63x5.8
Ethylene glycol 25% canister 25 l	[pce]	6	7	9	12
Propylene glycol 32% canister 25 l	[pce]	8	9	11	15

EXAMPLE: GEOTHERMAL PROBES

Accessories for the heat source system optionally available.

Duplex probe 32x2.9 mm		3x100 m	4x80 m	4x100 m	5x100 m
Pressure loss in probe	[mbar]	129	76	125	170
Brine distributor		DN 40 x1 1/2″ fem. for 6 circuits kvs 30	DN 50x2″ fem. for 8 circuits kvs 30	DN 50x2″ fem. for 8 circuits kvs 30	DN 50x2″ fem. for 10 circuits kvs 30
Pressure loss in distributor	[mbar]	14	18	24	50
Residual head II (HP + probe)	[mbar]	797	929	825	562
Connection line 2x20 lm		DN 40-PE 50x4.6	DN 50-PE 63x5.8	DN 50-PE 63x5.8	DN 50-PE 63x5.8
System content, WQA	[litres]	700	773	946	1161
Ethylene glycol 25% canister 25 l	[pce]	7	8	10	12
Propylene glycol 32% canister 25 l	[pce]	9	10	13	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"		
Circulation pump, WNA		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	[m^3/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 DN 32 kvs 16			External DN 32 kvs 16			External DN 32 kvs 16			External DN 32 kvs 16		
Pressure loss	[mbar]	4	2	1	7	3	2	12	6	3	20	12	6
Residual head II M2-1 or M4-1	[mbar]	652	718	755	490	633	712	339	612	700	43	452	655
Residual head II M4-4 for cascade	[mbar]	-	-	-	-	-	-	-	-	-	-	-	-
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
Residual head III heating	[mbar]	585	684	738	424	600	696	325	605	696	15	436	647
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	615	699	746	427	601	697	262	573	681	6	430	645
Residual head III M4-4	[mbar]	-	-	-	-	-	-	-	-	-	-	-	-

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
WW = domestic hot water

WNA = heat sink system
NT = 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″		
Circulation pump, WNA		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 DN 40 kvs 25			External DN 40 kvs 25		
Pressure loss	[mbar]	14	7	3	31	6	3
Residual head II M2-1 or M4-1	[mbar]	359	538	632	-6	417	582
Residual head II M4-4 for cascade	[mbar]	429	574	650	156	499	623
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
Residual head III heating	[mbar]	292	504	615	-64	387	568
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	312	514	620	71	384	566
Residual head III M4-4	[mbar]	382	550	638	91	466	606

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 SINK SYSTEM: TERRA GOLF

FOR GROUND SOURCE HEAT PUMPS (BRINE)

GOLF MAXI PLUS

Unit type		**GMSW 7 HK plus**		**GMSW 10 HK plus**		**GMSW 7 HK plus VX**		**GMSW 10 HK plus VX**	
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	
Circulation pump, WNA		Yonos Para RS 25/7.5		Yonos Para RS 25/7.5		Yonos Para RS 25/7.5		Yonos Para RS 25/7.5	
		internal		internal		internal		internal	
Pump delivery head	[mbar]	684	684	630	630	684	684	630	630
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**
Operating point		B0/W35	B15/W60	B0/W35	B15/W60	B0/W35	B15/W60	B0/W35	B15/W60
Spread	[K]	5	7	5	7	5	7	5	7
Flow rate	[m³/h]	1,2	1,2	1,7	1,7	1,1	1,2	1,7	1,7
Pressure loss – internal	[mbar]	90	90	100	100	83	90	100	100
Flow meter		**FM-DN 20 x 1 1/4″ male kvs 10**		**FM-DN 20 x 1 1/4″ male kvs 10**		**FM-DN 20 x 1 1/4″ male kvs 10**		**FM-DN 20 x 1 1/4″ male kvs 10**	
Pressure loss	[mbar]	14,4	14,4	29	29	12,1	14,4	29	29
Residual head I	[mbar]	580	580	501	501	589	580	501	501
3-way switching module		**Internal DN 25 kvs 10**		**Internal DN 25 kvs 10**		**Internal DN 25 kvs 10**		**Internal DN 25 kvs 10**	
Pressure loss	[mbar]	14,4	14,4	29	29	12,1	14,4	29	29
Residual head II for HTG	[mbar]	565	565	472	472	577	565	472	472
Residual head II for H/C	[mbar]	551	551	443	443	565	551	443	443
External PHE for DHW			**2007**		**2007**		**2007**		**2007**
Dimension / pressure loss – heating	[mbar]	1″	23	1″	45	1″	23	1″	45
Dimension / pressure loss – DHW	[mbar]	1″	29	1″	59	1″	29	1″	59
Residual head III HTG	[mbar]		543		427		543		427
Residual head III H/C	[mbar]		528		398		528		398

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

WW = domestic hot water
WNA = heat sink system
CH = central heating

H/C = heating/cooling
FM = flow meter
male = male thread

kvs = kvs value

GOLF MAXI PLUS

Unit type		GMSW 12 HK plus		GMSW 15 HK plus		GMSW 17 HK plus	
Connection dimension	[inch]	DN 32 - 1 1/4" male		DN 32 - 1 1/4" male		DN 40 - 1 1/2" male	
Circulation pump, WNA		Yonos Para RS 25/7.5		Yonos Para RS 25/7.5		Yonos Para RS 25/7.5	
		internal		internal		internal	
Pump delivery head	[mbar]	540	550	450	460	387	369
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**
Operating point		B0/W35	B15/W60	B0/W35	B15/W60	B0/W35	B15/W60
Spread	[K]	5	7	5	7	5	7
Flow rate	[m³/h]	2,1	2,0	2,5	2,4	2,9	3,1
Pressure loss – internal	[mbar]	90	80	100	90	100	110
Flow meter		**FM-DN 20 x 1 1/4" male kvs 10**		**FM-DN 20 x 1 1/4" male kvs 10**		**FM 25 x 1 1/2" male kvs 20**	
Pressure loss	[mbar]	44	40	62,5	57,6	21	24
Residual head I	[mbar]	406	429	288	311	266	235
3-way switching module		**External DN 32 kvs 16**		**External DN 40 kvs 25**		**External DN 40 kvs 25**	
Pressure loss	[mbar]	17	16	10	9,2	13,5	15,4
Residual head II for HTG	[mbar]	389	413	278	302	253	220
Residual head II for H/C	[mbar]	371	398	268	293	239	204
External PHE for DHW			**5007**		**5007**		**5007**
Dimension / pressure loss – heating	[mbar]	1 1/4"	14	1 1/4"	20	1 1/4"	33
Dimension / pressure loss – DHW	[mbar]	1"	18	1"	25,6	1"	42,7
Residual head III HTG	[mbar]		400		282		186
Residual head III H/C	[mbar]		384		273		171

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

SIZING THE HEAT SINK SYSTEM: TERRA GOLF AND TERRA M6

FOR GROUND SOURCE HEAT PUMPS (BRINE)

GOLF MAXI

Unit type		**GMSW 28 HK**		**GMSW 38 HK**	
Connection dimension	[inch]	DN 40 - 1 1/2″ male		DN 50 - 2″ male	
Circulation pump, WNA		Stratos Para 30/1-12		Stratos Para 30/1-12	
		external		external	
Pump delivery head	[mbar]	1053	1053	972	990
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**
Operating point		B0/W35	B15/W50	B0/W35	B15/W50
Spread	[K]	5	7	5	7
Flow rate	[m³/h]	3,4	3,4	5,0	4,7
Pressure loss – internal	[mbar]	120	120	190	170
Flow meter		**FM 25 x 1 1/2″ male kvs 20**		**FM 50 x 2″ fem. kvs 40**	
Pressure loss	[mbar]	29	29	15,6	13,8
Residual head I	[mbar]	904	904	766	806
3-way switching module		**External DN 40 kvs 25**		**External DN 50 kvs 50**	
Pressure loss	[mbar]	18,5	18,5	10	8,8
Residual head II for HTG	[mbar]	886	886	756	797
Residual head II for H/C	[mbar]	867	867	746	789
External PHE for DHW			**5007**		**6007**
Dimension / pressure loss – heating	[mbar]	1 1/4″	40	1 1/4″	46
Dimension / pressure loss – DHW	[mbar]	1″	51,4	1″	68,2
Residual head III HTG	[mbar]		846		752
Residual head III H/C	[mbar]		827		743

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

WW = domestic hot water
WNA = heat sink system
CH = central heating

H/C = heating/cooling
FM = flow meter
male = male thread

kvs = kvs value

M6

Unit type		**TERRA 40**		**TERRA 61**		**TERRA 76**	
Connection dimension	[inch]	DN 50 -2″ male		DN 50 - 2″ male		DN 50 - 2″ male	
Circulation pump, WNA		Stratos 40/1-8		Stratos 40/1-8		Stratos 65/1-12	
		external		external		external	
Pump delivery head	[mbar]	720	720	936	954	909	954
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**
Operating point		B0/W35	B15/W50	B0/W35	B15/W50	B0/W35	B15/W50
Spread	[K]	5	7	5	7	5	7
Flow rate	[m³/h]	6,9	4	10,7	6,2	13,3	7,5
Pressure loss – internal	[mbar]	40	25	45	25	50	20
Flow meter		**FM 50 x 2″ fem. kvs 40**		**FM 50 x 2″ fem. kvs 40**		**FM 50 x 2″ fem. kvs 40**	
Pressure loss	[mbar]	30	10	71,5	24	110	35
Residual head I	[mbar]	650	685	819	905	748	899
3-way switching module		**External DN 50 kvs 40**		**External DN 50 kvs 40**		**External DN 50 kvs 40**	
Pressure loss	[mbar]	30	10	71,5	24	110	35
Residual head II for HTG	[mbar]	620	675	748	881	638	864
Residual head II for H/C	[mbar]	591	665	676	857	527	829
External PHE for DHW			**6007**		**9507**		**9609**
Dimension / pressure loss – heating	[mbar]	1 1/4″	33	2″	67	2″	59
Dimension / pressure loss – DHW	[mbar]	1″	49,4	2″	61,5	2″	51,6
Residual head III HTG	[mbar]		642		814		805
Residual head III H/C	[mbar]		632		790		770

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: 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 101 HPLA			TERRA MULTI DUO 122 HPLA			TERRA MULTI DUO 137 HPLA			TERRA MULTI DUO 152 HPLA		
Order no.	290843			290844			290845			290846		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	TERRA 40	6,9	DN 50	TERRA 61	10,7	DN 65	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 61	10,7	DN 65	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65	TERRA 76	13,3	DN 65
Overall pipe (G1)		17,6	DN 80		21,4	DN 80		24	DN 100 (DN 80)		26,6	DN 100 (DN 80)
Buffer tank (P1)	PU 2000		DN 80	PU 2000		DN 80	PU 3000		DN 100 (DN 80)	PU 3000		DN 100 (DN 80)

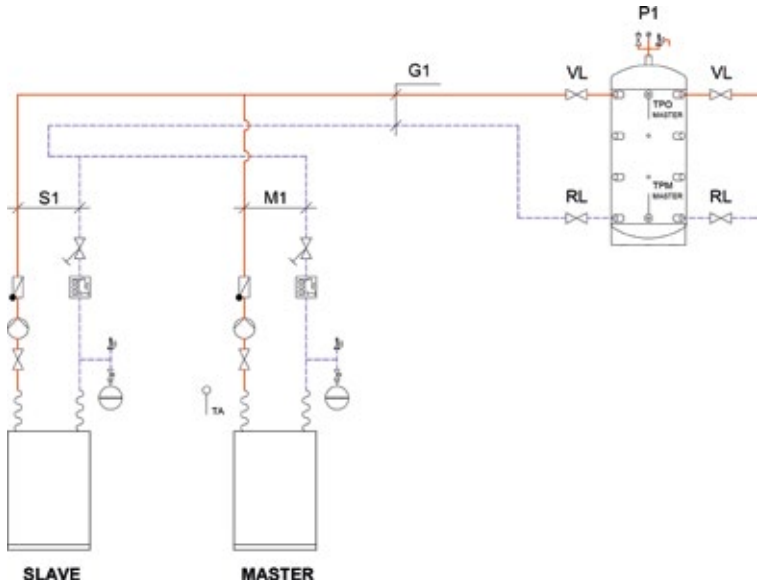
CASCADE TRIO

Unit type	TERRA MULTI TRIO 177 HPLA			TERRA MULTI TRIO 198 HPLA			TERRA MULTI TRIO 228 HPLA		
Order no.	290847			290848			290849		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	TERRA 40	6,9	DN 50	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 61	10,7	DN 65	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65
Slave (S2)	TERRA 76	13,3	DN 65	TERRA 76	13,3	DN 65	TERRA 76	13,3	DN 65
Main pipe (B1)		17,6	DN 80		21,4	DN 80		26,6	DN 100 (DN 80)
Overall pipe (G1)		30,9	DN 100		34,7	DN 100		39,9	DN 100
Buffer tank (P1)	PU 3000		DN 100	PU 3000		DN 100	PU 3000		DN 100

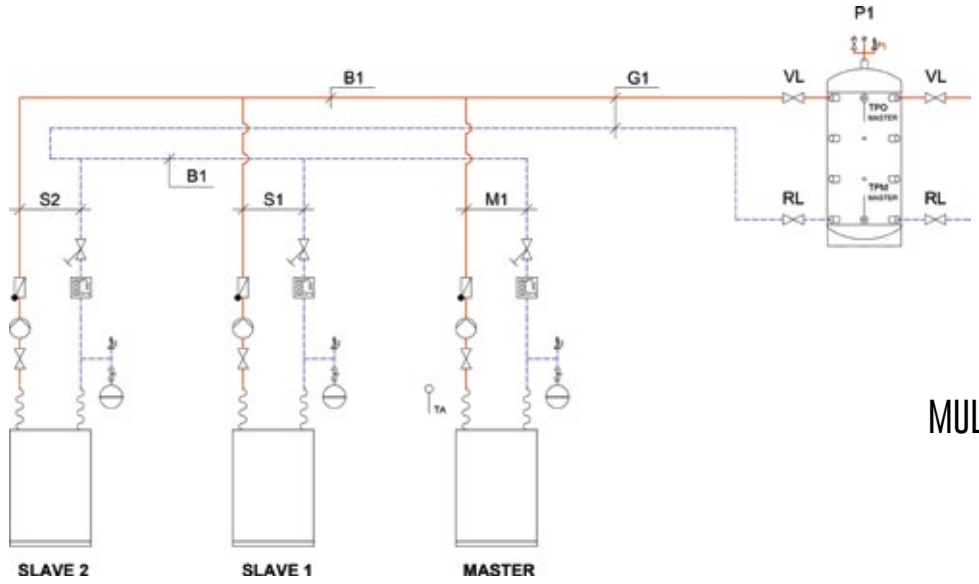
CASCADE QUATTRO

Unit type	TERRA MULTI QUATTRO 244 HPLA			TERRA MULTI QUATTRO 274 HPLA			TERRA MULTI QUATTRO 304 HPLA		
Order no.	290850			290851			290852		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	TERRA 61	10,7	DN 65	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65
Slave (S1)	TERRA 61	10,7	DN 65	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65
Slave (S2)	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65	TERRA 76	13,3	DN 65
Slave (S3)	TERRA 61	10,7	DN 65	TERRA 76	13,3	DN 65	TERRA 76	13,3	DN 65
Main pipe (B1)		21,4	DN 80		21,4	DN 80		26,6	DN 100 (DN 80)
Main pipe (B2)		32,1	DN 100		34,7	DN 100		39,9	DN 100
Overall pipe (G1)		42,8	DN 125		48	DN 125		53,2	DN 125
Buffer tank (P1)	PU 3000		DN 125	PU 3000		DN 125	PU 3000		DN 125

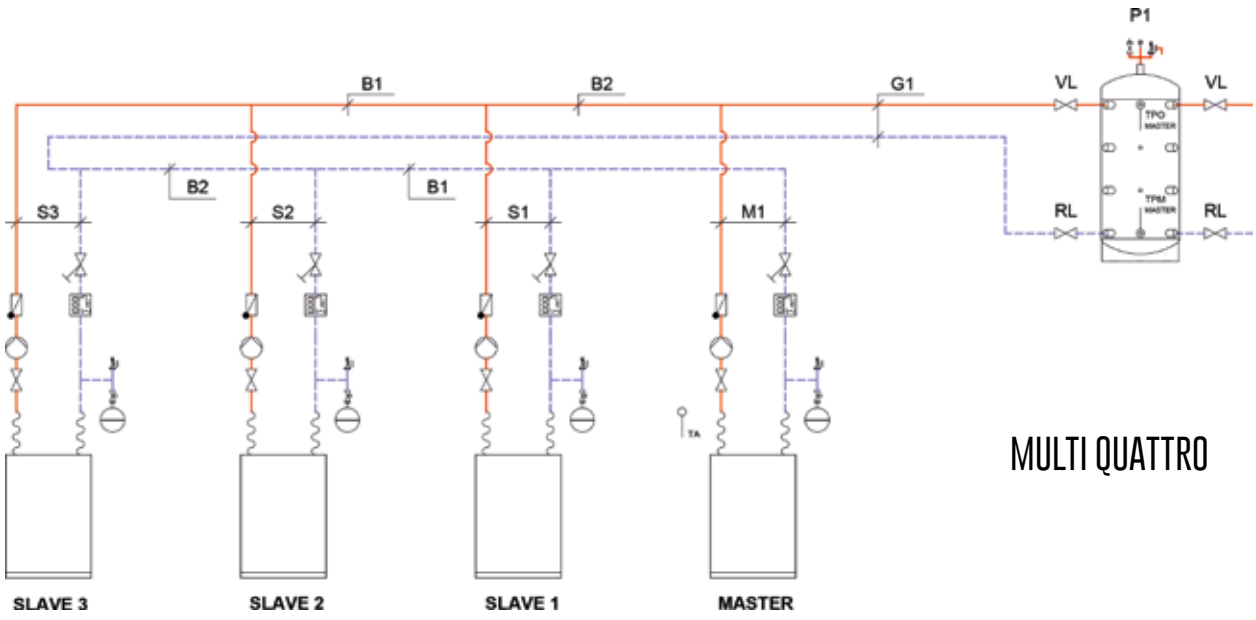
Note: The given flow rates and pipe diameters are guide values. A system-specific layout is required.
P1: Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



MULTI DUO



MULTI TRIO



MULTI QUATTRO

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 routing 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 [1)]

Soil conditions	Max. spec. extraction capacity at 1800 h/a	Max. spec. extraction capacity at 2400 h/a
Dry, non-cohesive soil	10 W/m² and 5 W/lm	8 W/m² and 4 W/lm
Cohesive soil, moist	20-30 W/m² and 15 W/lm	16-24 W/m² and 12 W/lm
Water-saturated soil, sand/gravel	40 W/m² and 20 W/lm	32 W/m² and 16 W/lm

The max. spec. extraction capacity was calculated as 25 W/m² at 1800 h/a or as 20 W/m² 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 [1)]

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)	[m²]	196	276	392	456	516	672
Extraction surface (at 2400 h/a)	[m²]	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

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

GEOTHERMAL COLLECTOR LAYING [1]

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.

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

SCREED DRYING

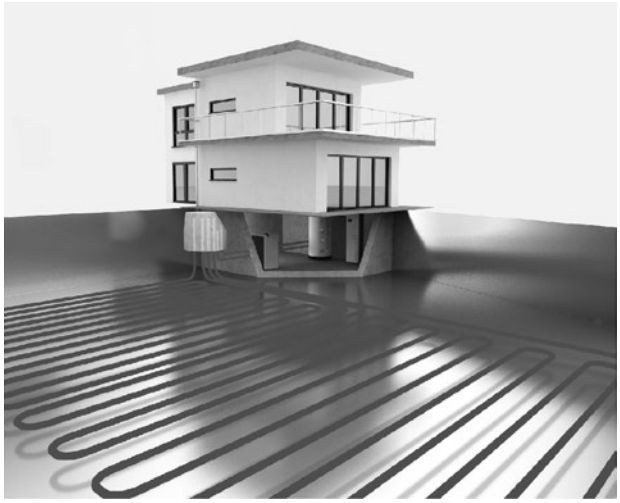
The drying of flooring screed by means of the heat pump is not permitted for ground-connected systems. In such cases, screed can be dried using the electric immersion heater in the heat pump buffer tank or mobile drying units. Installation and adjustment of the controller are the responsibility of the 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 routing plan of the individual collector circuits based on the actual routing 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:

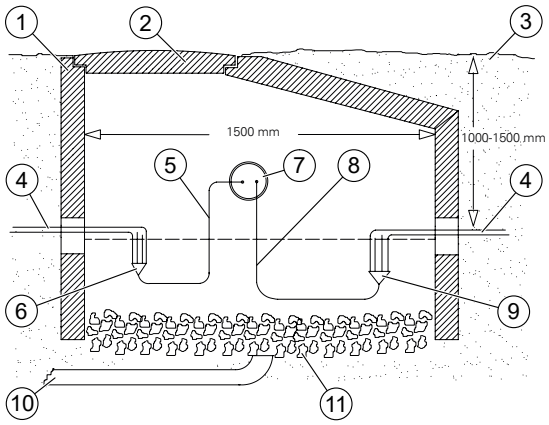
A collection shaft is to be provided with extensive collector systems and/or if the collector system is not directly connected to the wall conduit. The Venturi distributor and header are installed in this shaft. The collection shaft can be made inexpensively by using readily available concrete rings. 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 ≥ 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:

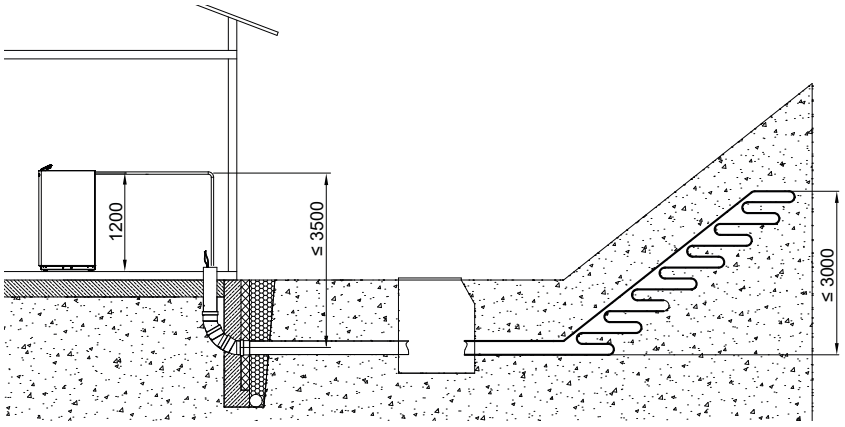
Wall conduits must be constructed using pipe liners in accordance with engineering standards. Care must be taken over sealing between the pipe liner and wall, as well as between the liner and the connection lines. In areas vulnerable to flooding, sealing must conform to the requirements for water pressure.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

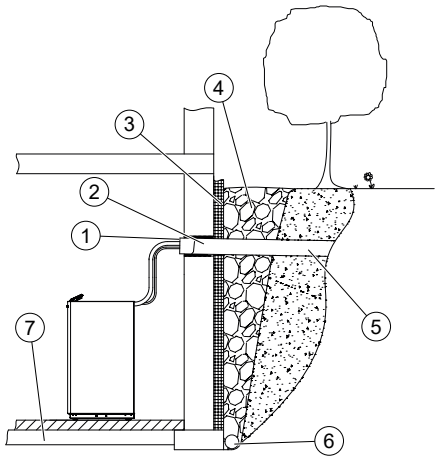


1) Concrete ring (diameter min. 1500 mm), shaft depth min. 2000 mm
2) Access (diameter min. 800 mm)
3) Sand bed
4) Collector pipes
5) Suction gas line (diameter 22-34 mm)
6) Suction gas header
7) Pipe liner to building (diameter min. 150 mm)
8) Liquid line (diameter 12-16 mm)
9) Liquid distributor
10) 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 HCUA			TERRA DX 8 HCUA			TERRA DX 11 HCUA		
Connection dimension	[inch]	DN 32 1 1/4" male			DN 32 1 1/4" male			DN 32 1 1/4" male		
Circulation pump, WNA		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	[m^3/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 DN 32 kvs 16			External DN 32 kvs 16			External DN 32 kvs 16		
Pressure loss	[mbar]	4	2	1	9	4	2	19	10	5
Residual head II M2-1 or M4-1	[mbar]	565	673	733	446	628	709	192	542	682
Residual head II M4-4 for cascade	[mbar]	-	-	-	-	-	-	-	-	-
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
Residual head III heating	[mbar]	498	639	716	383	596	693	185	538	680
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	531	656	724	381	595	693	115	502	663
Residual head III M4-4	[mbar]	-	-	-	-	-	-	-	-	-

LIMITS OF USE

Unit type		TERRA DX 5 HCUA			TERRA DX 8 HCUA			TERRA DX 11 HCUA		
		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
WW = domestic hot water

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

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

		M2			M4					
Unit type		**TERRA DX 13 HCUA**			**TERRA DX 15 HCUA**			**TERRA DX 18 HCUA**		
Connection dimension	[inch]	DN 32 1 1/4" male			DN 40 1 1/2" male			DN 40 1 1/2" male		
Circulation pump, WNA		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^3/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 DN 32 kvs 16			External DN 40 kvs 25			External DN 40 kvs 25		
Pressure loss	[mbar]	23	12	6	12	6	3	20	10	5
Residual head II M2-1 or M4-1	[mbar]	-174	332	612	335	526	626	113	445	587
Residual head II M4-4 for cascade	[mbar]	-	-	-	398	557	642	218	499	614
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
Residual head III heating	[mbar]	-199	320	606	267	491	609	43	410	570
Residual head III heating/cooling, plus additional external 3-way switching module M2-1; M4-1	[mbar]	-211	313	603	288	502	614	60	419	574
Residual head III M4-4	[mbar]	-	-	-	351	533	630	166	472	600

LIMITS OF USE

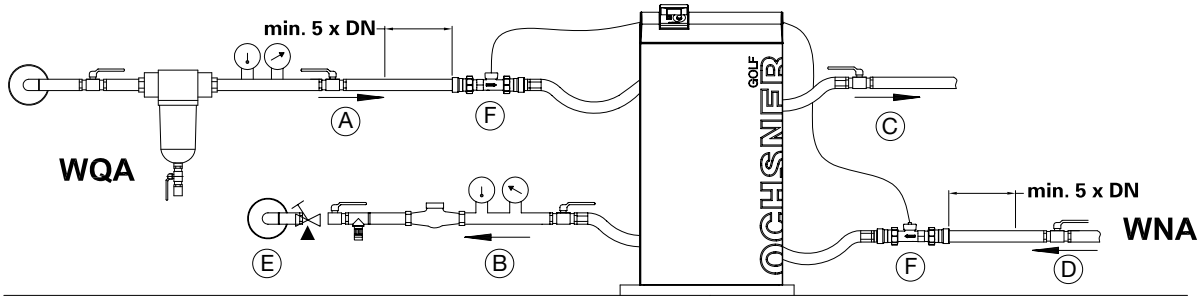
Unit type		**TERRA DX 13 HCUA**			**TERRA DX 15 HCUA**			**TERRA DX 18 HCUA**		
		5K	7K	10K	5K	7K	10K	5K	7K	10K
Limits of use: flow temperatures tf-max/tf-min HP/WNA (heating at air = 2°C; cooling at air = 35°C)										
tf-max HP heating	[°C]	65	65	65	65	65	65	65	65	65
tf-max WNA heating	[°C]	60	60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

ENGINEERING AND INSTALLATION INFORMATION: AQUA GOLF AND 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 hose hoses, as per the installation manual. A suitable filter (OCHSNER accessory) 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]

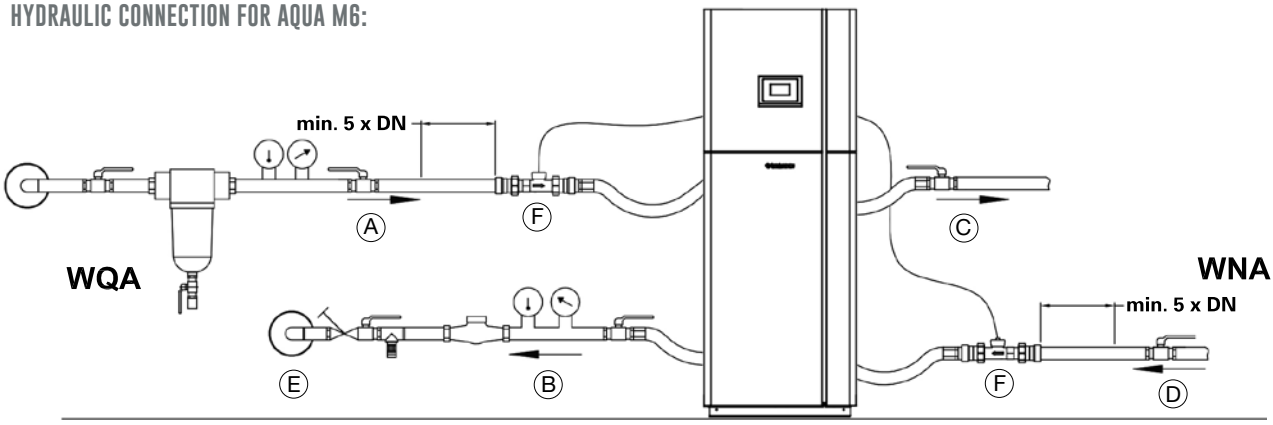
HYDRAULIC CONNECTION FOR AQUA GOLF



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

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

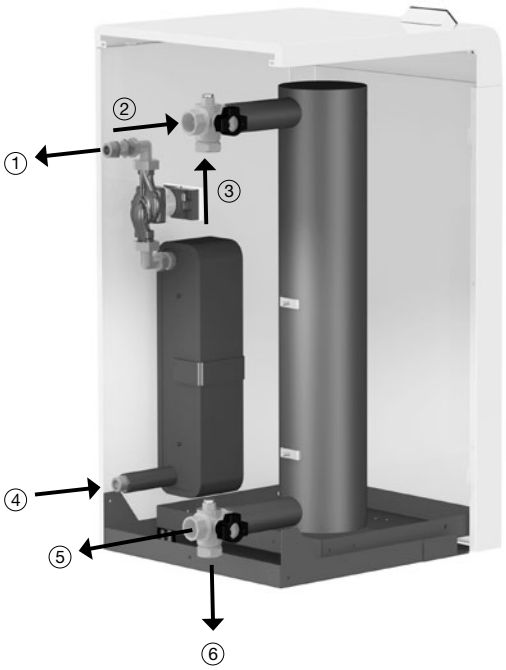
WQA) Heat source system
WNA) Heat sink system

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:

				Plate heat exchanger		Shell and tube heat exchanger
				Copper soldered	Stainless steel soldered	Stainless steel
El. conductivity	[µS/cm]	1)		< 500	> 500	50 - 2500
pH value		1)	< 6	0	0	0
			6 - 8	+	+	+
			> 8	–	0	0
Chloride	[mg/l]	1)	< 10	+	+	+
			10 – 100	+	+	+
			100 – 200	0	+	+
			> 200	–	- 3)	0
Sulphate	[mg/l]	1)	< 50	+	+	+
			50 – 100	0	+	–
			> 100	–	0	–
Carbon dioxide (free aggressive)	[mg/l]	1)	< 5	+	+	+
			5 – 20	0	+	+
			> 20	–	0	–
Oxygen	[mg/l]	1)	< 1	+	+	+
			1 – 8	0	+	+
			> 8	–	+	0
Ammonium	[mg/l]	1)	< 2	+	+	+
			2 – 20	0	+	–
			> 20	–	+	–
Iron with manganese	[mg/l]	2)		< 0.2	<0.2 3)	< 0.5
Manganese	[mg/l]	2)	> 0.05	–	- 3)	0
Sulphide	[mg/l]	1)	< 5	+	+	+
Chlorine (free)	[mg/l]	1)	< 0.5	+	+	+

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

1) If these limits are not observed, a stainless steel soldered stainless steel plate heat exchanger must be installed in the heat pump instead of the copper soldered stainless steel plate heat exchanger (specified with the order).
2) Due to anticipated ochre formation, we advise against the use of a water/water heat pump.
3) 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 GOLF AND 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 OF SUBMERSIBLE PUMPS:

- Submersible pumps I and II:
  - Inverter integrated in the submersible pump (set with mobile control unit)
  - Steel rope
  - 20 m cable
- Submersible pump V to X:
  - With external inverter
  - LC filter
  - Control box
  - Steel rope
  - 20 m cable

OPTIONAL FOR THE SUBMERSIBLE PUMPS

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

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.

EXTERNAL INVERTER INCL. LC FILTER FOR SUBMERSIBLE PUMPS V TO X:

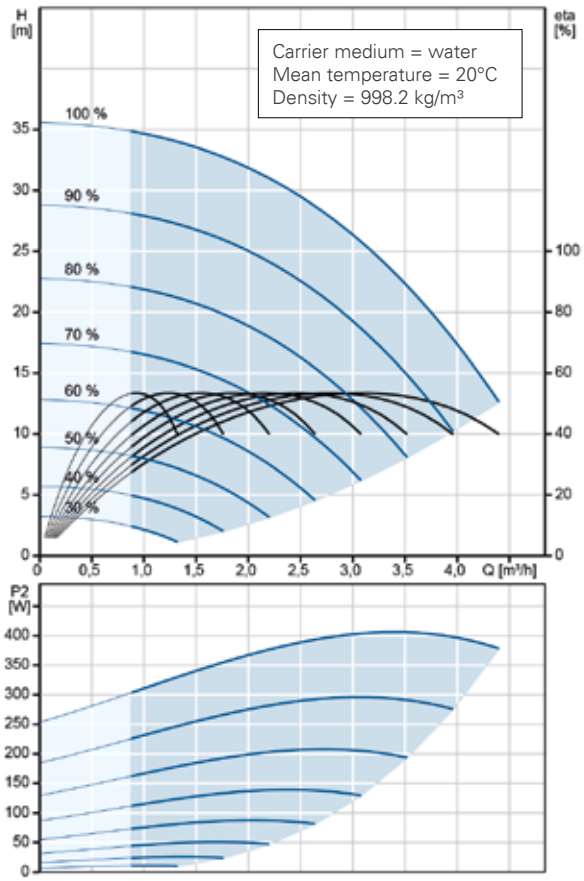
The external inverter is intended for installation in a customer-supplied control box. Cabling is not supplied.

The setting is made by OCHSNER customer service during commissioning. The settings are stored in the inverter.

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.

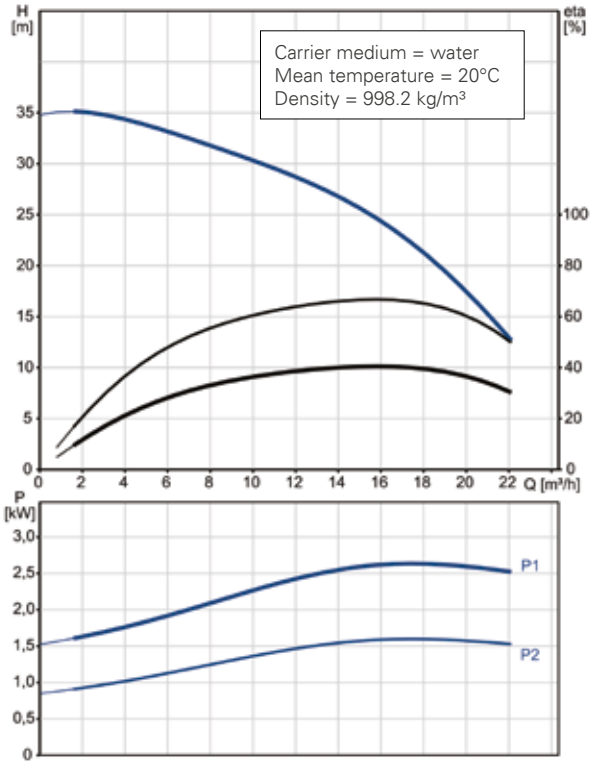
SUBMERSIBLE PUMP I, SPEED CONTROLLED

1x 230 V, 50 Hz, 3”



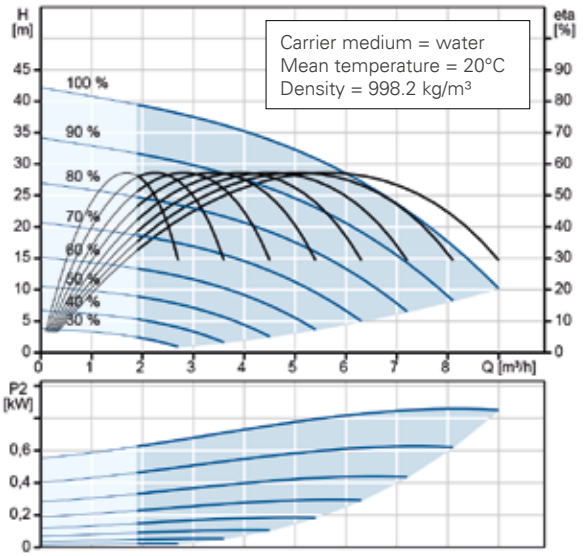
SUBMERSIBLE PUMP V, SPEED CONTROLLED

3x 400 V, 60 Hz, 6”



SUBMERSIBLE PUMP II, SPEED CONTROLLED

1x 230 V, 50 Hz, 3”



SIZING THE HEAT SOURCE SYSTEM: AQUA GOLF AND AQUA M4/M6

FOR HEAT PUMPS WITH WATER AS HEAT SOURCE

		GOLF MIDI PLUS			GOLF MAXI PLUS	
Unit type		**GMWW 7 plus**	**GMWW 11 plus (VX)**	**GMWW 14 plus (VX)**	**GMWW 17 plus (VX)**	**GMWW 22 plus**
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
Nominal flow rate – source	[m³/h]	1,6	1,85	2,2	3,0	3,9
Pressure loss internal	[mbar]	34	46	46	86	126
WQA heat exchanger type		Tube bundle	Tube bundle	Tube bundle	Tube bundle	Tube bundle
Pressure loss – filter	[mbar]	40	50	100	30	40
Flow meter pressure loss	[mbar]	25	30	50	90	150
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** [1)]	**7 - 30** [1)]	**2 - 25** [1)]	**3 - 23** [1)]	**8 - 14** [1)]
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	9 – 35
Residual head	[m]	**12 - 37** [1)]	**12 - 37** [1)]	**9 - 34** [1)]	**9 - 34** [1)]	**7 - 32** [1)]
Efficiency	[%]	50	50	58	58	58

		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
Nominal flow rate – source	[m³/h]	1,6	1,85	2,2
Pressure loss internal	[mbar]	59	76	96
WQA heat exchanger type		Tube bundle	Tube bundle	Tube bundle
Pressure loss – filter	[mbar]	40	50	100
Flow meter pressure loss	[mbar]	-	-	-
SUBMERSIBLE PUMP I				
Speed controlled	Order no. 290605			
Delivery head	[m]	10 – 33	10 – 33	6 – 29
Residual head	[m]	**7 - 30** [1)]	**7 - 30** [1)]	**2 - 25** [1)]
Efficiency	[%]	58	58	58
SUBMERSIBLE PUMP II				
Speed controlled	Order no. 290606			
Delivery head	[m]	14 – 39	14 – 39	13 – 38
Residual head	[m]	**12 - 37** [1)]	**12 - 37** [1)]	**9 - 34** [1)]
Efficiency	[%]	50	50	58

		GOLF MAXI PLUS		M6	
Unit type		**GMWW 36 plus**	**AQUA 54**	**AQUA 83**	**AQUA 97**
Connection dimension	[inch]	DN 50 2″ male	DN 50 2″ male	DN 50 2″ male	DN 50 2″ male
Nominal flow rate – source	[m³/h]	6,2	9,6	14,7	17,1
Pressure loss internal	[mbar]	210	60	75	81
Pressure loss – filter	[mbar]	10	10	30	40
Flow meter pressure loss	[mbar]	24	60	135	180
SUBMERSIBLE PUMP II					
Speed controlled	Order no. 290606				
Delivery head	[m]	5 – 27	-	-	-
Residual head	[m]	**2 - 24** [1)]	**-**	**-**	**-**
Efficiency	[%]	58	-	-	-
SUBMERSIBLE PUMP V					
Speed controlled	Order no. 290608				
Delivery head	[m]	-	5 – 29	5 – 25	8 – 20
Residual head	[m]	**-**	**4 - 28** [1)]	**4 – 23**	**7 - 18** [1)]
Efficiency	[%]	-	20 – 38	20 – 38	20 – 38

		M4		
Unit type		**AQUA 17**	**AQUA 22**	**AQUA 36**
Connection dimension	[inch]	DN 32 1 1/4″ male	DN 32 1 1/4″ male	DN 50 2″ male
Nominal flow rate – source	[m³/h]	3,0	3,9	6,2
Pressure loss internal	[mbar]	176	276	234
WQA heat exchanger type		Tube bundle	Tube bundle	Plate heat exchanger
Pressure loss – filter	[mbar]	30	40	10
Flow meter pressure loss	[mbar]	-	-	-
SUBMERSIBLE PUMP I				
Speed controlled	Order no. 290605			
Delivery head	[m]	6 – 26	10 – 17	–
Residual head	[m]	**3 - 23** [1)]	**8 - 14** [1)]	–
Efficiency	[%]	58	58	–
SUBMERSIBLE PUMP II				
Speed controlled	Order no. 290606			
Delivery head	[m]	12 – 37	9 – 35	5 – 27
Residual head	[m]	**9 - 34** [1)]	**7 - 32** [1)]	**2 – 24**
Efficiency	[%]	58	58	58

[1)] 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.

WQA = heat source system
male = male thread
kvs = kvs value

SIZING THE HEAT SINK SYSTEM: AQUA GOLF AND AQUA M4/M6

FOR HEAT PUMPS WITH WATER AS HEAT SOURCE

		GOLF MIDI PLUS						GOLF MAXI PLUS			
Unit type		**GMWW 7 plus**		**GMWW 11 plus (VX)**		**GMWW 14 plus (VX)**		**GMWW 17 plus (VX)**		**GMWW 22 plus**	
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	
Circulation pump, WNA		Yonos Para 25/7.5		Yonos Para 25/7.5		Yonos Para 25/7.5		Stratos Para 25/1-8		Stratos Para 25/1-8	
		internal		internal		internal		internal		internal	
Pump delivery head	[mbar]	675	675	603	684	540	666	666	666	576	666
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**
Operating point		W10/W35	W15/W60	W10/W35	W15/W60	W10/W35	W15/W60	W10/W35	W15/W60	W10/W35	W15/W60
Spread	[K]	5	7	5	7	5	7	5	7	5	7
Flow rate	[m³/h]	1,2	0,8	1,8	1,1	2,1	1,5	2,85	1,9	3,8	2,6
Pressure loss – internal	[mbar]	97	35	100	50	85	60	100	70	130	80
Flow meter		**FM-DN 20 kvs 10**		**FM-DN 20 kvs 10**		**FM-DN 20 kvs 10**		**FM-DN 20 kvs 10**		**FM-DN 20 kvs 10**	
Pressure loss	[mbar]	14,4	6,4	32,4	12	44	22,5	81,2	36,1	144	67,6
Residual head I	[mbar]	564	634	471	622	411	584	485	560	302	518
3-way switching module		**Internal DN 25 kvs 10**		**Internal DN 25 kvs 10**		**Internal DN 25 kvs 10**		**External DN 32 kvs 16**		**External DN 32 kvs 16**	
Pressure loss	[mbar]	14,4	6,4	32,4	12	44	22,5	31,8	14	65	32
Residual head II for HTG	[mbar]	549	627	438	610	367	561	453	546	237	486
Residual head II for H/C	[mbar]	535	621	406	598	323	539	421	532	172	454
External PHE for DHW			**2007**		**2007**		**2007**		**5007**		**5007**
Dimension / pressure loss – heating	[mbar]	1"	10	1"	19	1"	35	1 1/4"	12	1 1/4"	23
Dimension / pressure loss – DHW	[mbar]	1"	13	1"	24,7	1"	46	1"	16	1"	30
Residual head III HTG	[mbar]		617		591		526		533		463
Residual head III H/C	[mbar]		611		579		503		519		431

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

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		**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	
Circulation pump, WNA		Yonos Para 25/7.5		Yonos Para 25/7.5		Yonos Para 25/7.5	
		internal		internal		internal	
Pump delivery head 90%	[mbar]	675	675	603	684	540	666
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]	1,2	0,8	1,85	1,3	2,2	1,5
Internal pressure loss M4-1	[mbar]	108	55	170	82	182	89
Internal pressure loss M4-4	[mbar]	86	45	131	60	124	62
Residual head I M4-1	[mbar]	567	620	433	602	358	577
Residual head I M4-4	[mbar]	589	630	472	624	416	604

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
Residual head II M4-1	[mbar]		610		605		542
		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

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

WNA = heat sink system
male = male thread
kvs = kvs value

H/C = heating/cooling
CH = central heating

GOLF MAXI PLUS

M6

Unit type		GMWW 36 plus		AQUA 54		AQUA 83		AQUA 97	
Connection dimension	[inch]	DN 50 - 2″ male		DN 50 - 2″ male		DN 50 - 2″ male		DN 50 - 2″ male	
Circulation pump, WNA		Stratos 40/1-8		Stratos 40/1-8		Stratos 65/1-12		Stratos 65/1-12	
		external		external		external		external	
Pump delivery head	[mbar]	720	720	612	720	873	945	855	945
Operating mode		**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**	**H/C**	**DHW**
Operating point		W10/W35	W15/W50	W10/W35	W15/W50	W10/W35	W15/W50	W10/W35	W15/W50
Spread	[K]	5	7	5	7	5	7	5	7
Flow rate	[m³/h]	6,1	3,5	9,2	5,2	14,5	8,2	16,9	10
Pressure loss – internal	[mbar]	195	50	60	25	70	30	75	30
Flow meter		**FM-DN 50 kvs 40**		**FM-DN 50 kvs 40**		**FM-DN 50 kvs 40**		**FM-DN 50 kvs 40**	
Pressure loss	[mbar]	93	30,6	53	17	131	42	178	62,5
Residual head I	[mbar]	432	639	499	678	672	873	602	853
3-way switching module		**External DN 40 kvs 25**		**External DN 50 kvs 40**		**External DN 50 kvs 40**		**External DN 50 kvs 40**	
Pressure loss	[mbar]	59,5	19,6	53	17	131	42	178	63
Residual head II for HTG	[mbar]	372	620	446	661	540	831	423	790
Residual head II for H/C	[mbar]	313	600	393	644	409	789	245	728
External PHE for DHW			**6007**		**9507**		**9609**		**9609**
Dimension / pressure loss – heating	[mbar]	1 1/4″	25	2″	47	2″	66	2″	98
Dimension / pressure loss – DHW	[mbar]	1″	38	2″	43	2″	62	2″	92
Residual head III HTG	[mbar]		595		614		765		692
Residual head III H/C	[mbar]		575		597		723		630

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

M4

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	
Circulation pump, WNA		Stratos Para 25/1-8		Stratos Para 25/1-8		Stratos 40/1-8	
		internal		internal		internal	
Pump delivery head 90%	[mbar]	666	666	576	666	720	720
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	1,9	3,8	2,6	6,1	3,5
Internal pressure loss M4-1	[mbar]	262	126	460	222	603	331
Internal pressure loss M4-4	[mbar]	179	91	313	152	393	231
Residual head I M4-1	[mbar]	404	540	116	444	117	389
Residual head I M4-4	[mbar]	487	575	263	514	327	489

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
Residual head II M4-1	[mbar]		528		421		364
		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

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 hose hoses, as per the installation manual. A suitable filter (OCHSNER accessory) 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 137 HPLA			AQUA MULTI DUO 166 HPLA			AQUA MULTI DUO 180 HPLA			AQUA MULTI DUO 194 HPLA		
Order no.	290853			290854			290855			290856		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	AQUA 54	9,2	DN 65	AQUA 83	14,5	DN 80	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 83	14,5	DN 80	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80	AQUA 97	16,9	DN 80
Overall pipe (G1)		23,7	DN 80		29	DN 100		31,4	DN 100		33,8	DN 100
Buffer tank (P1)	PU 2000		DN 80	PU 2000		DN 100	PU 3000		DN 100	PU 3000		DN 100

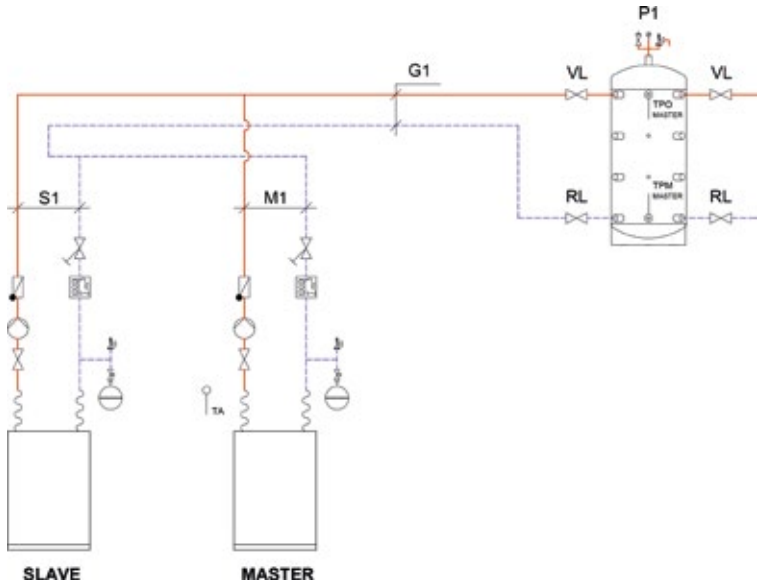
CASCADE TRIO

Unit type	AQUA MULTI TRIO 234 HPLA			AQUA MULTI TRIO 263 HPLA			AQUA MULTI TRIO 291 HPLA		
Order no.	290857			290858			290859		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	AQUA 54	9,2	DN 65	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 83	14,5	DN 80	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80
Slave (S2)	AQUA 97	16,9	DN 80	AQUA 97	16,9	DN 80	AQUA 97	16,9	DN 80
Main pipe (B1)		23,7	DN 80		29	DN 100		33,8	DN 100
Overall pipe (G1)		40,6	DN 100		45,9	DN 100		50,7	DN 100
Buffer tank (P1)	PU 3000		DN 100	PU 3000		DN 100	PU 3000		DN 100

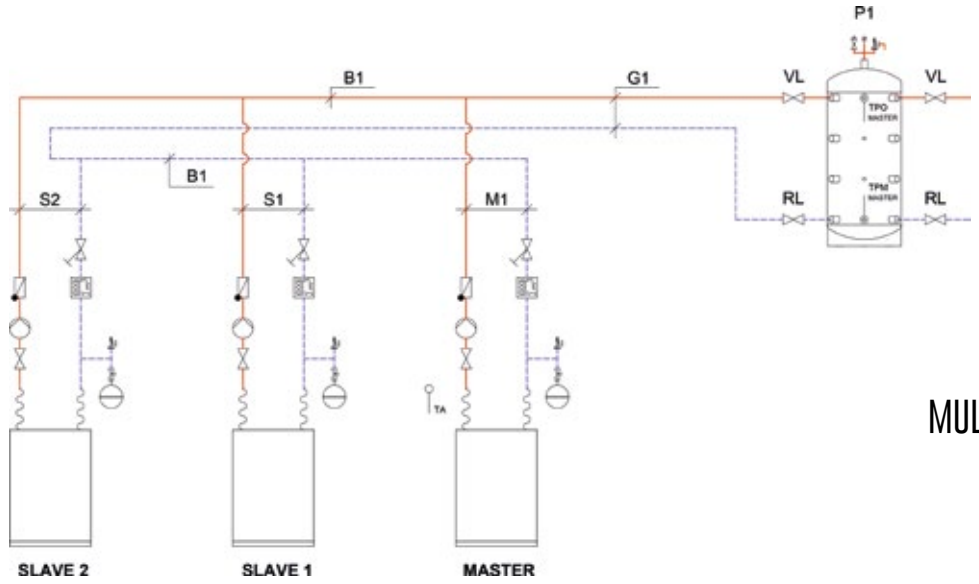
CASCADE QUATTRO

Unit type	AQUA MULTI QUATTRO 332 HPLA			AQUA MULTI QUATTRO 360 HPLA			AQUA MULTI QUATTRO 388 HPLA		
Order no.	290860			290861			290862		
	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter	Unit type	Flow rate	Pipe diameter
		[m³/h]	[mm]		[m³/h]	[mm]		[m³/h]	[mm]
Master (M1)	AQUA 83	14,5	DN 80	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80
Slave (S1)	AQUA 83	14,5	DN 80	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80
Slave (S2)	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80	AQUA 97	16,9	DN 80
Slave (S3)	AQUA 83	14,5	DN 80	AQUA 97	16,9	DN 80	AQUA 97	16,9	DN 80
Main pipe (B1)		29	DN 100		29	DN 100		33,8	DN 100
Main pipe (B2)		43,5	DN 100		45,9	DN 100		50,7	DN 100
Overall pipe (G1)		58	DN 125		62,8	DN 125		67,6	DN 125
Buffer tank (P1)	PU 3000		DN 125	PU 3000		DN 125	PU 3000		DN 125

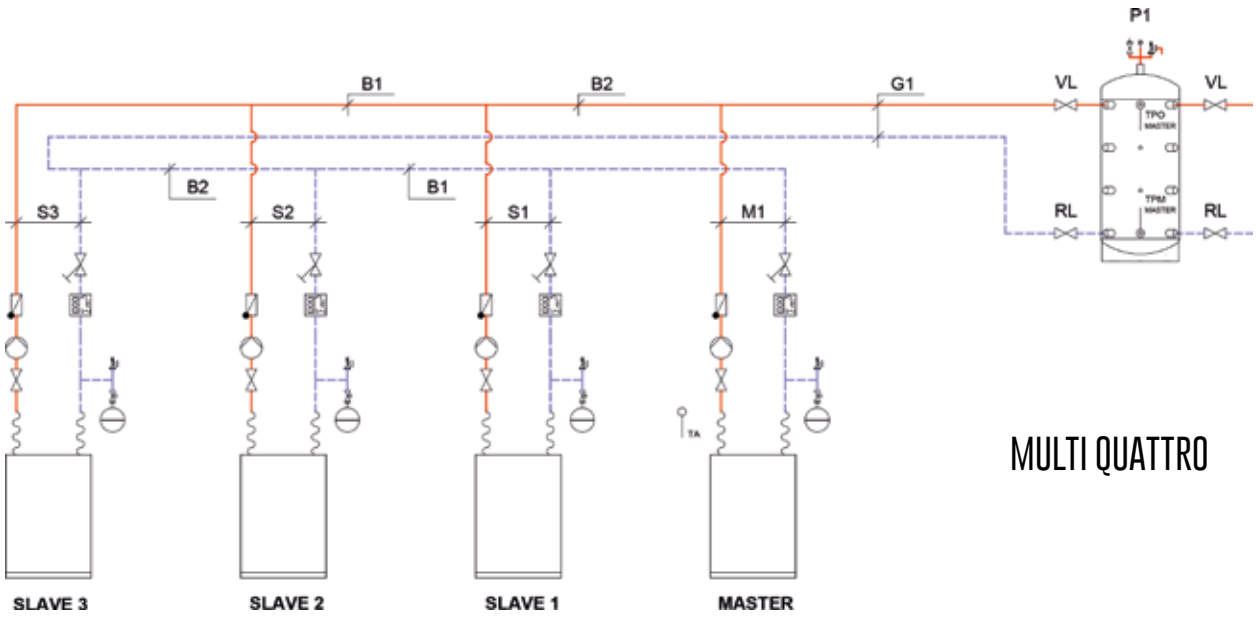
Note: The given flow rates and pipe diameters are guide values. A system-specific layout is required.
P1: Applies to operation via the OTE cascade manager. A larger tank volume may be necessary for systems with cascade management via a third party controller.



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.

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.

COMMISSIONING

AIR M2 / M4 / M6	Order no.	Price €
AIR 7	801101	**1.066,-**
AIR 11	801115	**1.066,-**
AIR 18 / GMLW 9 / 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,-**

AIR FALCON / HAWK / BASIC / EAGLE	Order no.	Price €
AIR BASIC 109	801116	**742,-**
AIR FALCON 212 / BASIC 211 / BASIC 416 / BASIC 618	801111	**914,-**
AIR EAGLE 414 / EAGLE 717	801114	**1.388,-**
AIR HAWK 208	801458	**830,-**

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

TERRA DX	Order no.	Price €
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,-**

TERRA M2 / M4 / GOLF	Order no.	Price €
TERRA 6	801420	**635,-**
TERRA 8	801421	**635,-**
TERRA 11	801422	**635,-**
TERRA 14	801423	**635,-**
TERRA 18	801424	**635,-**
TERRA 27	801432	**635,-**
GMSW 7	801403	**635,-**
GMSW 10	801405	**635,-**
GMSW 12	801407	**635,-**
GMSW 15	801409	**635,-**
GMSW 17 / GMSW 18	801411	**635,-**
GMSW 22 / GMSW 27 / GMSW 28	801413	**635,-**
GMSW 38	801414	**635,-**

TERRA M6	Order no.	Price €
TERRA 40	801415	**958,-**
TERRA 61 / TERRA 76	801417	**958,-**
TERRA MULTI DUO 101	801448	**1.238,-**
TERRA MULTI DUO 122	801449	**1.238,-**
TERRA MULTI DUO 137	801450	**1.238,-**
TERRA MULTI DUO 152	801451	**1.238,-**
TERRA MULTI TRIO 177	801452	**1.856,-**
TERRA MULTI TRIO 198	801453	**1.856,-**
TERRA MULTI TRIO 228	801454	**1.856,-**
TERRA MULTI QUATTRO 244	801455	**2.476,-**
TERRA MULTI QUATTRO 274	801456	**2.476,-**
TERRA MULTI QUATTRO 304	801457	**2.476,-**

AQUA M4 / GOLF	Order no.	Price €
AQUA 11 / GMWW 11	801302	**635,-**
AQUA 14 / GMWW 14 / GMWW 13 HK	801305	**635,-**
AQUA 17 / GMWW 17	801307	**635,-**
AQUA 7 / GMWW 7	801433	**635,-**
AQUA 22 / GMWW 22	801309	**635,-**
AQUA 36 / GMWW 36	801313	**635,-**

AQUA M6	Order no.	Price €
AQUA 54	801315	**958,-**
AQUA 83 / AQUA 97	801317	**958,-**
AQUA MULTI DUO 137	801438	**1.238,-**
AQUA MULTI DUO 166	801439	**1.238,-**
AQUA MULTI DUO 180	801440	**1.238,-**
AQUA MULTI DUO 194	801441	**1.238,-**
AQUA MULTI TRIO 234	801442	**1.856,-**
AQUA MULTI TRIO 263	801443	**1.856,-**
AQUA MULTI TRIO 291	801444	**1.856,-**
AQUA MULTI QUATTRO 332	801445	**2.476,-**
AQUA MULTI QUATTRO 360	801446	**2.476,-**
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.

	Price €
Commissioning cancellation	**210,-**

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 design and installation guidelines have been observed (system installed according to OCHSNER standard hydraulic schematics or a special OCHSNER 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 hydronically 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 routing 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 professional 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.

Activities carried out by OCHSNER:
- Checking that the system has been installed according to the machine-specific design and installation guidelines. In commissioning the system, OCHSNER offers no warranty regarding the ability to meet the heat demand of the building to be heated.
- 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.

The fixed commissioning fee includes:
- Fixed fee for journey to site (journey time of customer service technician + vehicle expenses)
- Refrigerant
- All components and parts required for standard commissioning that are not supplied with the product
- Does not include laying of connection line, which is invoiced for according to actual work carried out

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 repossessing 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 Deliver, 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 it 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

SUPPORT WITH TRANSPORT AND SYSTEM DESIGN

TRANSPORT

INCOTERMS

The Incoterm OCHSNER Wärmepumpen GmbH uses to dispatches your goods is EXW. This means ex works. This Incoterm also means that you would be responsible for organising the transport and that the liability risk transfers to you at the point of loading. However, we offer transportation as a service. We can therefore only claim redress for transportation damage on your behalf if the damage is noted on the waybill. For any damage that was not noted, the burden of proof lies with you. We will be happy to provide you with support.

WARRANTY

Warranty terms depend on the conditions specified in the respective export partner agreement. Please contact your authorised dealer for further warranty details.

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 180

SUPPORT WITH SYSTEM DESIGN

System design is the responsibility of the system designer/installer. In the event that special system solutions require designs that are not contained in existing OCHSNER schematic diagrams (see manual or Partnernet), we can offer support with system design. This support 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 support with system design 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 support with system design only and is not intended to replace a detailed, expert design/engineering process in any way.

SUPPORT WITH SYSTEM DESIGN	Price €
Fixed fee 1 - Minor adaptations to the standard schematic - Personalisation of the schematic - Gathering the required additional materials in digital form (operating manuals, work instructions, etc.) - Personal advice by phone	**525,-**
Fixed fee 2 - Developing systems and concepts - Preparing parameters - Coordination with customer service regarding system and commissioning - System sizing down to buffer tank - Gathering the required additional materials in digital form (operating manuals, work instructions, etc.) - Personal advice by phone	**1.050,-**
Fixed fee 3 - Developing comprehensive/complex systems and concepts - Preparing parameters - Coordination with customer service regarding system and commissioning - System sizing down to buffer tank - Gathering the required additional materials in digital form (operating manuals, work instructions, etc.) - Personal advice by phone	**2.100,-**

CONTACT US!

NEED SUPPORT WITH SYSTEM DESIGN?

OCHSNER system partner hotline		Email
Austria	+43 (0) 820 / 20 10 20	helpdesk@ochsner.at
Germany	+49 (0) 1805 / 832 840	helpdesk@ochsner.de
Fax	+43 (0) 5 04245-8346	

CUSTOMER SERVICE

In case of questions about existing installations, maintenance and commissioning.

France	s.a.v@ochsner.com
International	customerservice@ochsner.com

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CONTACT:

OCHSNER Wärmepumpen GmbH
Ochsner-Straße 1, A-3350 Haag
Tel: +43 (0)5 042458
Fax: +43 (0)5 04245-349
Email: kontakt@ochsner.at
www.ochsner.com

OCHSNER Wärmepumpen GmbH Germany
Kurfürstendamm 11, D-10719 Berlin
Email: kontakt@ochsner.de
www.ochsner.com

NAVIGATION AID

MEANING OF SYMBOLS

Air as a heat source

Water as a heat source

Ground **as a heat source** – brine

Ground as a heat source **– direct geothermal extraction**

Geothermal probes **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

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.

LAN connection Bus communication

DELIVERY CLASSES

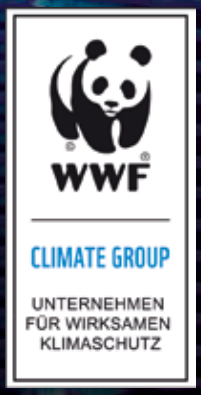
I = from stock
II = max. 4 weeks, manufactured to order
III = max. 4-8 weeks, manufactured to order
IV = Please enquire for delivery time; more than 8 weeks, manufactured to order

NOTES

NOTES

Further technical details under
www.ochsner.com

Member of the



wwf.at/ClimateGroup

W795_EX-EUR-EN_V01 | 02/2020

OCHSNER
HEAT PUMPS

OCHSNER Wärmepumpen GmbH Austria (Commercial register)
A-4020 Linz, Krackowizerstraße 4, kontakt@ochsner.at

Head Office/Factory
A-3350 Haag, Ochsner-Straße 1, tel.: +43 (0)5 042458
Partner hotline: +43 (0)820 201020, kontakt@ochsner.at

OCHSNER Wärmepumpen GmbH Germany
Kurfürstendamm 11, D-10719 Berlin
Partner hotline: +49 (0)1805 832 840, kontakt@ochsner.de

OCHSNER Wärmepumpen GmbH Switzerland
CH-8001 Zurich, Uraniastrasse 18
Partner hotline: +41 (0)58 3204122, kontakt@ochsner.com

OCHSNER East
PL 31-302 Kraków, ul. Pod Fortem Nr. 19
Tel: +48 (0)12 4214527, kontakt@ochsner.pl

Visit us at **www.ochsner.com**
and **www.facebook.com/ochsnerwaermepumpen**

identity.co.at