



REVERSIBLE BRINE-TO-WATER HEAT PUMP:

Optimised for cooling operation with waste heat recovery

Increased cooling requirements in buildings

Nowadays, in many buildings the cooling requirements are higher than the heating requirements. The reasons for the increased cooling requirements and the lower heat consumption are obvious. The heat consumption is lower in buildings which are thermally insulated to a high standard, while the cooling requirements increase due to higher solar energy gains, the rising demands for more comfort and convenience and larger internal heat loads. Cooling requirements are increasing especially in commercial buildings such as doctor's practices and offices due to the waste heat from electrical devices and the lighting. Therefore, apart from heating, the efficient cooling of buildings must increasingly be taken into consideration.

The Solution: the reversible heat pump from Dimplex - for heating and cooling

The reversible brine-to-water heat pump from Dimplex is an energy-efficient heating and cooling device. The integrated regulation enables heating in winter and cooling in summer with fan convectors and panel heating. In cooling operation, an integrated additional heat exchanger uses the waste heat directly as free energy for domestic hot water and swimming pool water preparation. Especially high coefficients of performance can be achieved when the waste heat from cooling operation can be used permanently (e.g. for the preheating of a production process). Then, up to 10 times the consumed energy is given off as usable heat output or cooling capacity by the heat pump.

Dimplex

INNOVATIVE HEATING AND COOLING



Reversible brine-to-water heat pump

- ✓ Max. flow temperature in heating operation 55 °C
- ✓ Min. flow temperature in cooling operation 7 °C
- ✓ Can be used for heating, cooling, domestic hot water and swimming pool water preparation
- ✓ Domestic hot water temperatures up to 60 °C with simultaneous heating or cooling request
- ✓ Heating and cooling with two compressors to permit flexible adaptation of the performance

Heat pump manager with heating and cooling regulation

The integrated regulation enables permanent heating or cooling operation with parallel domestic hot water or swimming pool water preparation. In cooling operation, the waste heat is transferred to a heat consumer via an additional heat exchanger or discharged via the borehole heat exchanger. The cooling capacity generated can be utilised for dew-point-controlled silent cooling (e.g. cooled ceiling) as well as for dynamic cooling (e.g. fan convectors).

DEVICE INFORMATION REVERSIBLE BRINE-TO-WATER HEAT PUMP

Order reference		SI 30TER+	SI 75TER+
Design		reversible	reversible
Connection voltage	V	400	400
Maximum flow temperature heating	°C	55	55
Minimum flow temperature cooling	°C	7	7
Heat output/COP according to EN 255 at B0/W35	1. Comp.	15,4 kW / 4,2	34,0 kW / 3,9
	2. Comp.	28,5 kW / 3,9	66,4 kW / 3,6
Cooling output/COP at B20/W10 according to EN 14511		39,4 kW / 5,1	75,5 kW / 4,5
Width	mm	1000	1350
Height	mm	1660	1890
Depth	mm	775	750
Weight	kg	385	658

Active or passive cooling

In Germany, deeper ground layers have constant temperature levels of approx. 10 °C all year round, which can be directly utilised for cooling using a heat exchanger. The heat pump compressor is not required – it remains passive. In this case, a Dimplex brine-to-water heat pump is used with an additional passive cooling controller (special accessory) to enable the cooling operating mode. Active cooling with a reversible brine-to-water heat pump is generally used when passive cooling is no longer possible with a higher cooling load and the higher brine temperatures this involves.