M-TEC
ENERGY FOR FUTURE

GROUND SOURCE HEAT PUMPS 3-52 KW

YOUR ENERGY OF TOMORROW WELL MANAGED

M-TEC INTERNATIONAL PRODUCTPORTFOLIO

M-TEC Technology

HEATING COOLING

An intelligent complete system of energy production, storage and consumption will reduce electricity costs in the long term. This brings more living comfort with more efficient use of energy.
Further benefits of M-TEC International are:

- Can be combined with photovoltaic, solar or e.g. Energy Management (Smart1, Loxone)
- Maximum efficiency through intelligent power control
- High quality - product from Upper Austria
- Individual warranty packages
- Developed and produced in Austria

100% SUSTAINABLE

M-TEC International heat pumps are produced in Upper Austria with 100% renewable energy - 100% energy generated from our own photovoltaic system and our own hydropower plant.

Clean and affordable energy for everyone
Our mission is people's independence in the energy supply of their homes through Heat pump, photovoltaic, storage and E-mobility, controlled by our innovative Energy management system E-Smart.

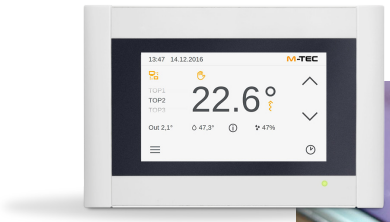
M-TEC CONTROLLER AP440

M-TEC's heat pumps are operating with innovative concepts that combine user-friendliness and energy efficiency. Each M-TEC heat pump comes as a standard with the latest control technology from KEBA, a leading manufacturer of control and control technology with the highest quality and safety standards.

KeEnergy - the best Controller

KeEnergy's scheme of KEBA will help you get the most out of your M-TEC heat pump. In addition, PV systems can be integrated so that self-produced PV energy can be used for its own installation. The standardized Modbus interface makes it possible to connect to home automation-systems. That makes this scheme extremely versatile.

A controller that offers simplicity and convenience:



Whether touch operation, M-TEC control or control via smartphone - networked technology makes your heat pump versatile:

Reliability and safety

As a manufacturer of innovative and high-quality products and solutions for industrial and banking automation, KEBA is used to the high standards and industry-standards. This quality, reliability and safety is also included in the M-TEC International heat pump scheme. KEBA has been working with banking institutions for many years and is - among other things - responsible for the security of internet traffic from ATMs in Austria. That same protection is also used for your M-TEC International heatpump. This prevents, with the highest security possible, unauthorized access to the heat pump and the underlying network. And that safety is of the utmost importance to you.

Energy efficiency

To achieve maximum efficiency, KEBA offers hardware and software modules that are perfectly coordinated and aligned – and that ultimately means lower energy consumption.

Leading by innovation

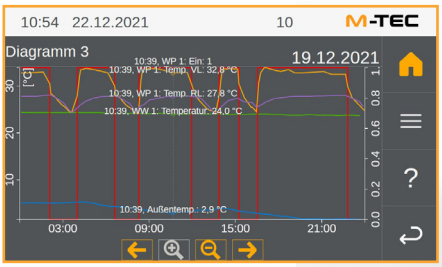
A simple and reliable operation of the heat pump is possible via a touch screen, but also via smartphone, tablet or PC. The heat pump can be operated in the way you want.

HOW THE M-TEC INTERNATIONAL HEAT PUMP WORKS

In principle, the heat pump works like a refrigerator: the same technique, only reversed utility. The heat pump receives energy from the heat source side (earth, water or air) at a low temperature and releases heat with a higher temperature on the heating side.

INTELLIGENT POWER CONTROL

The M-TEC International Power Inverter is a true innovation in the field of heat pump technology. The principle is very simple: The inverter adjusts the energy used to the actual needs of your home. The efficiency is thereby improved by approximately 20% and the life span of the compressor is prolonged due to significantly less switch-on cycles.



A geothermal heat pump uses solar energy stored in the ground. This solar energy is available at any time. Day or night, summer or winter, even unlimited, because it renews itself over and over again. Due to its relatively constant ground temperature, the earth is a particularly good heat accumulator. Starting at a depth of approx. 1m only very little temperature fluctuations occur, no matter how cold it is outside. We use either a flat collector (a large pipe system that is laid about 1m below ground) or a geothermal probe, via deep drilling into the ground (30 to 150 m).

TOP SYSTEM CONCEPT

The best heat pump is only as good as the designed system concept.
M-TEC International is always optimally oriented to this development!
This results in heating systems with maximum efficiency, which is permanently tested and confirmed by independent authorized testing institutes.

SMART GRID

M-TEC International heat pumps are already "*Smart Grid Ready*" today. With this function, you can use the cost savings of future electricity networks. In times where generally less power is consumed, electricity is also cheaper. Therefore the operating time of the heat pump should be shifted to this period. This is fully automated by M-TEC International's intelligent control system.

ADVANTAGES

- Intelligent power control
- Maximum efficiency of heat pump systems
- High innovative power also in the field of control technology
  - Inverter technology
  - Latest overheating control
  - PV Self-consumption optimization
  - Advanced "Smart Grid" functionality
  - External systems can be integrated
  - LAN interface in each heat pump
  - Easy to use touch screen technology
- **NEW!** Energy-Managementsystem **E-SMART** for best integration of photovoltaics, Battery storage, e-mobility, ...

CONNECT ALL THE DEVICES IN YOUR HOME EASILY AND EFFICIENTLY

Thanks to "Internet Inside", M-TEC heat pumps have been able to take advantage of current developments for years. The advantages of digital networking are obvious. Maintenance and fault diagnosis can be carried out quickly and easily via remote maintenance. Travel costs and time are eliminated. In addition, you can control your heating from anywhere: Whether smartphone or tablet - use the various options to manage your room temperatures.

INTERNET INSIDE

All M-TEC heat pumps are already equipped with the future technology of "*Internet Inside*". This allows you as a customer to control your heat pump from your mobile phone, tablet or PC. If the heat pump is no longer working optimally, the heat pump automatically signals the problem to your selected heat pump installer. Via "*Internet Inside*", these adjustments can be made to the control settings, without having to be on site. This saves your time and money.

INTEGRATION OF EXTERNAL SYSTEMS

The integration of a photovoltaic system, solar system or house management system are possible thanks to the intelligent control of the M-TEC heat pump.
Photovoltaic integration can use the self-generated electricity for space heating as well as hot water preparation, preferably for own consumption. Feeding your own PV electricity to the grid will only occur when the hot water storage tank is charged and the house is comfortably warm.

THE PHOTOVOLTAIC GROUND SOURCE HEAT PUMP

Outstanding features of M-TEC heat pumps are their efficiency and future-oriented control technology. Compared to conventional heating systems, this results in exceptionally low operating costs for heating and hot water.
Solar Thermal and Solar Photovoltaic systems can easily be integrated with the heat pump both enhancing and complimenting the heat pump to attain even higher levels of efficiency, reducing energy consumption and cutting emissions.

Touch control
M-TEC Touch panel AP440

ADVANTAGES

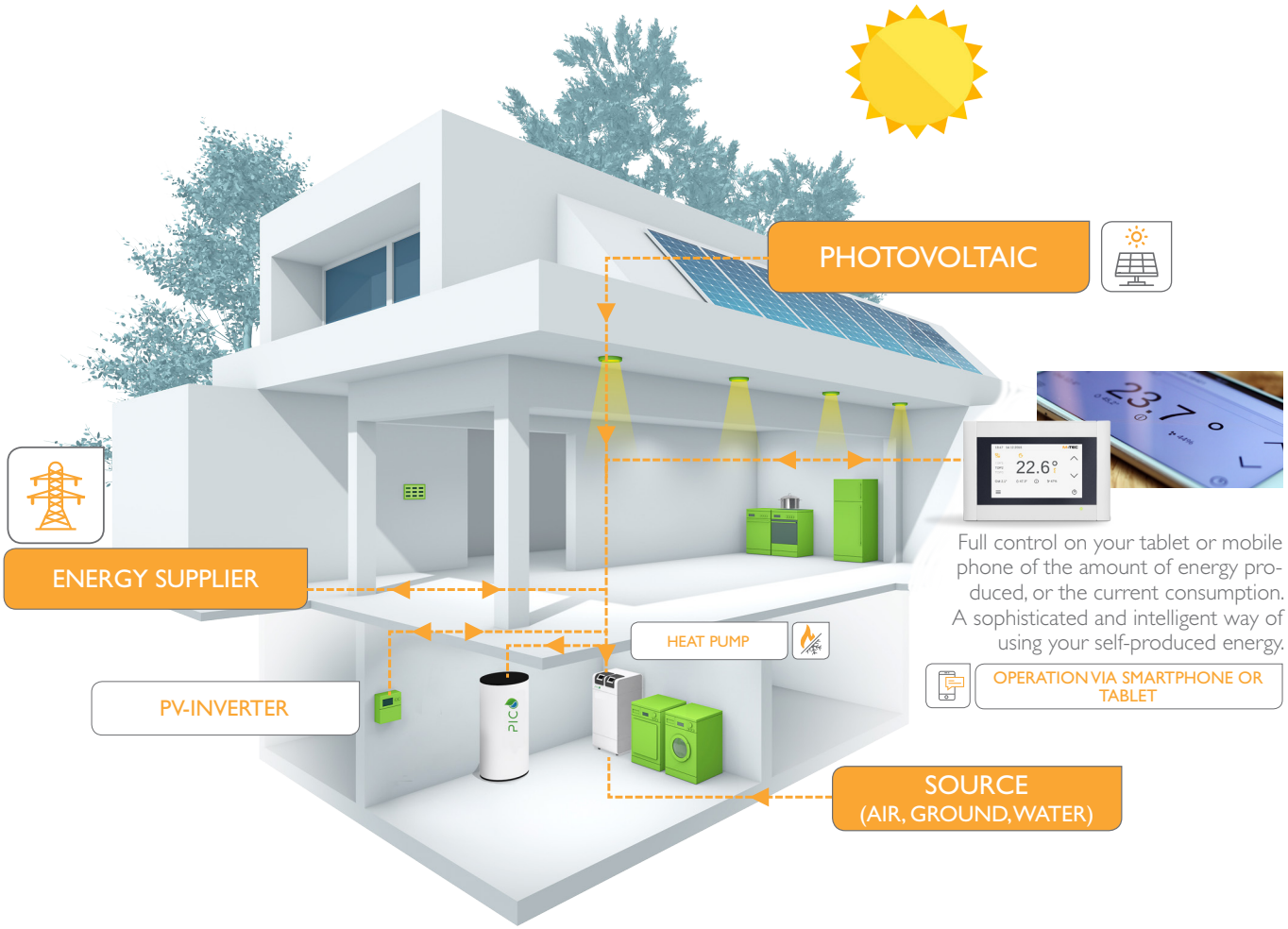
- Maximum self-consumption of free photovoltaic power
- High degree of comfort
- Long-term security of supply at the lowest cost
- Low maintenance
- Easy-to-use

Thanks to the sophisticated M-TEC International controller with TouchScreen, self-generated electricity from the photovoltaic system can be used for heating and cooling of the house. The speed control of the heat pump adapts itself to the photovoltaic power independently. The free photovoltaic electricity can thus be used as best as possible to heat the house, hot water and swimming pool.

MAXIMIZE SELF-CONSUMPTION OF EXCESS PV-ENERGY

The Solar PV system delivers a certain amount of power throughout the day, depending on the solar radiation and the installation of the PV system. This power is partly consumed directly in the house and excess power is fed back into the grid. If this power (determined by the 400V PV meter for the PV integration) exceeds a value defined in the controller for a specified period of time, then the excess energy operation mode of the heat pump will be activated. In excess energy operation, the heat consumers request the parameterized setpoint temperatures, which can be set in the "Photovoltaic" menu of the M-TEC International heat pump.
When used in conjunction with Solar PV the heat pump can be programmed to maximise self-consumption of energy virtually preventing excess solar electricity being exported to the grid, instead storing this free electricity as heat and hot water. As our heat pumps can achieve efficiency levels of more than 500%, each unit of solar electricity can be multiplied into 5 kilowatts of heat making it the very best use of Solar PV energy.

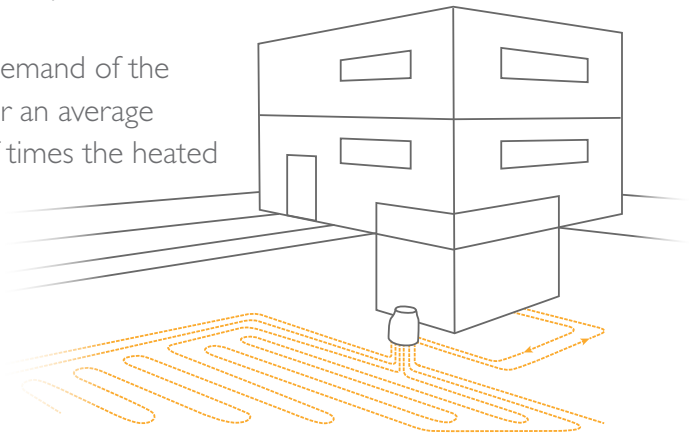
Tomorrows home is not only a living space for the family, but also a power plant producing and storing energy to minimise bills and reduce CO2 emissions.



A house with many new and innovative features. The home for tomorrow is not only a living space for the family, but also a power plant and energy storage. And that, without needing much energy from the outside. The self-consumption rate is maximized thanks to innovative M-TEC International technology. The heat pump controls the PV production and the consumption of energy in the home and makes them visible.

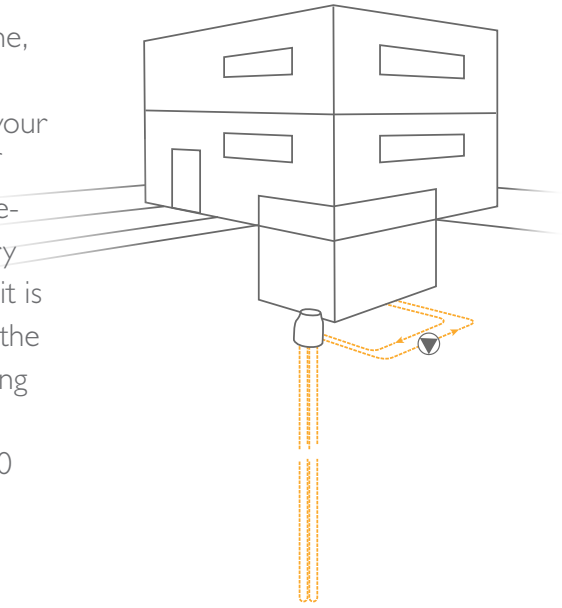
ENERGY SOURCE GROUND COLLECTOR BRINE

The ground of your property is a free and inexhaustible source of energy. Thanks to sun, rain and geothermal energy, your garden is always recharged like an energy storage, and is available year-round free of charge. Flat collectors operate with a horizontal pipe system in the ground, which is laid in a similar way as an UFH system in a snake-shape at a depth of approx. 1.3 m.
The required collector area depends on the heat demand of the building and the thermal conductivity of the soil. For an average single-family new building, it is about one and a half times the heated living space.

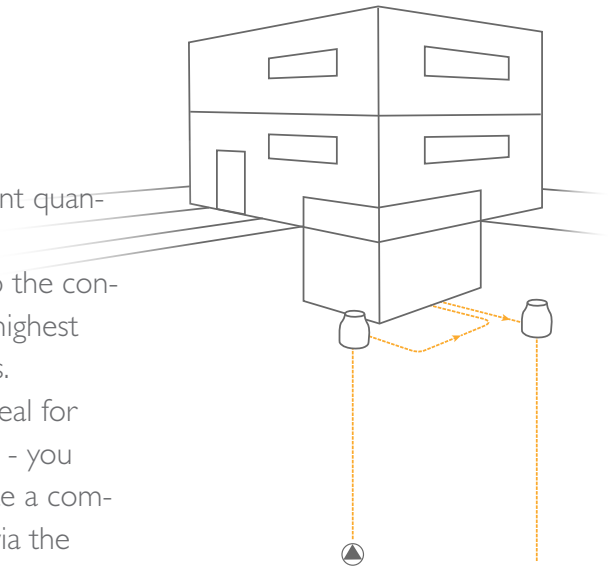


ENERGY SOURCE DEEP DRILLING GEOTHERMAL PROBE

In the case of geothermal probes, a frost-proof liquid, the brine, circulates through a plastic tube in a closed circuit.
A geothermal probe requires only a small area of land from your garden. Since, from a depth of 10 meters, the temperature of the soil is almost constant all year round, and is therefore independent of seasonal fluctuations, the geothermal probe is very effective especially in winter at low temperatures. In summer it is ideal for cooling. The necessary length of the probe and thus the depth of the bore depends on the heat demand of the building and the thermal conductivity of the soil.
With an average single-family new building it is about 100-120 meters.

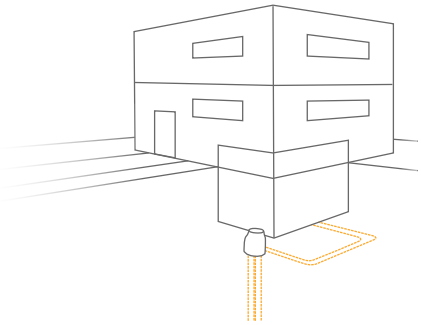


ENERGY SOURCE GROUNDWATER



If groundwater is available in a suitable depth and in sufficient quantity, you have an excellent heat source for a heat pump.
The temperature is constant between 7 and 12 °C. Due to the constant temperature of the ground water you can reach the highest levels of efficiency even at the lowest outside temperatures.
The two wells require only little space and are therefore ideal for small grounds. With this system, not only heating is possible - you can also use the heat pump for cooling and therefore create a comfortable room climate in the summer. Cooling takes place via the "heating system". The heat extracted from the room is transferred to the ground water via the heat pump.

CO_2-HEATPIPE



The patented CO2 heatpipe from M-TEC is the most efficient form of geothermal energy utilization which is currently available. The energy from the depths of the earth is transported to the surface of the earth free of charge and without a circulation pump. It's worth it, because at a depth of 80 m there are constant temperatures of around 13 ° C. In contrast to other energy sources, the source temperature of the CO2 heat pipe is completely independent of the weather and other seasonal factors.

The real unique thing about this system is the constant regeneration of the ground when the heat pump is idle by self-circulation of the refrigerant medium CO2.

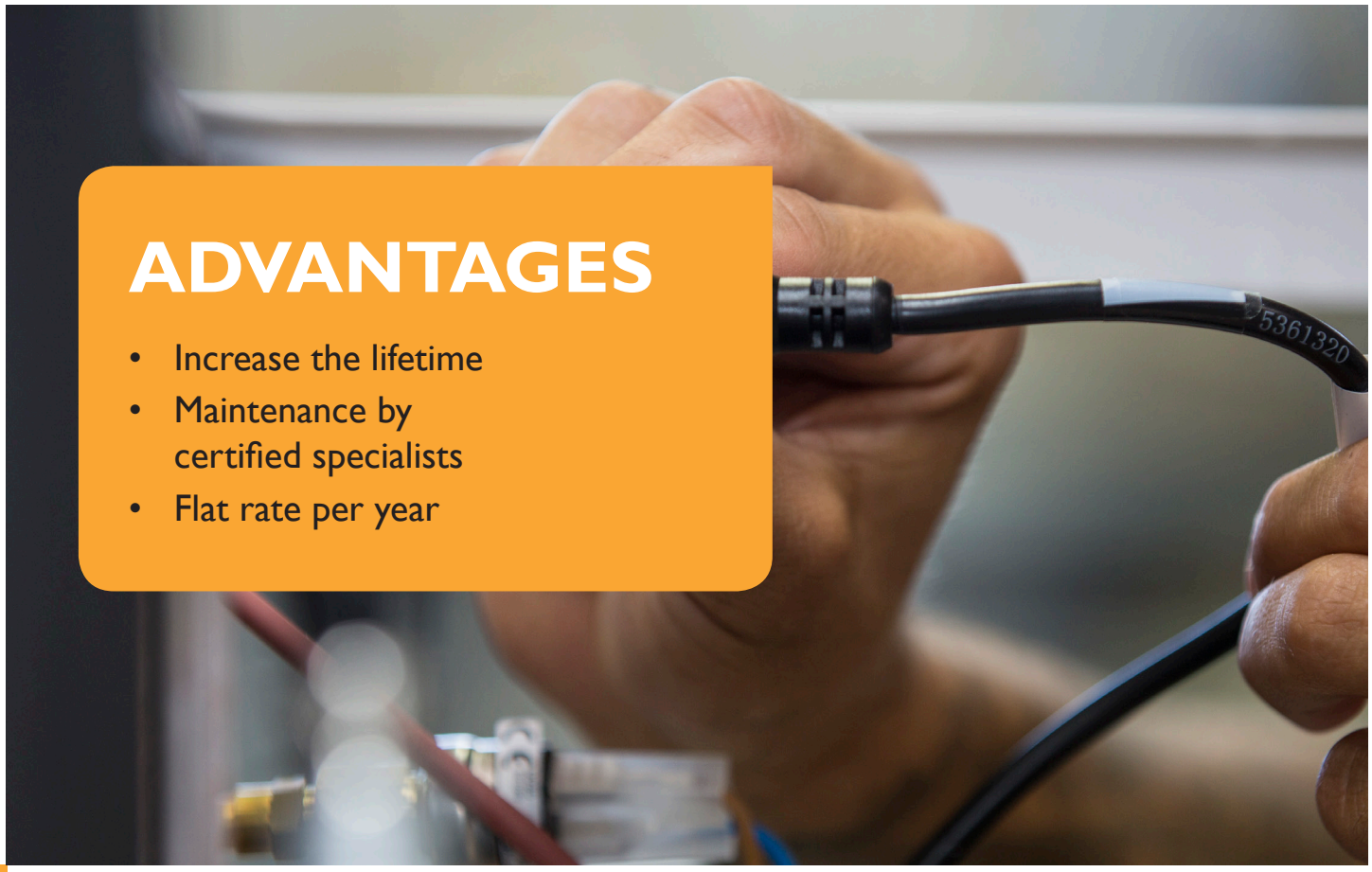
ADVANTAGES OF THE CO_2-HEATPIPE

Environmentally friendly
- natural heat carrier, no antifreeze
- Also possible in water conservation areas

Maintenance
- self-circulating probe system
- no additional pump required

Low operating costs
- no energy costs for pump

Minimum space requirements
- requires only 2.5 m2 of surface per hole



ADVANTAGES

- Increase the lifetime
- Maintenance by certified specialists
- Flat rate per year

INDIVIDUAL WARRANTY EXTENSIONS

Benefit from a specialist in geothermal energy with modern heat pump technology. M-TEC International heat pumps are the product of over 35 years experience in heat pumps and a cooperation in the field of control technology with the global company KEBA.

Due to the high quality requirements,
it is easy for us to offer extended warranties
in addition to the guarantees.

It can be chosen between

3 years,

5 years or

10 years

Warranty-Extension
on all materials. *

* Prices according to valid M-TEC International price list and valid warranty conditions

TECHNICAL DATA - COMPARISON

	Direct Expansion/Water			Brine/Water					Water/Water				
	Models	WPD 412	WPD 618		WPS 412	WPS 618	WPS1036	WPS1052		WPS-W 412	WPS-W 618	WPS-W1036	WPS-W1052
Power Range [kW]		3-13 kW	5-20 kW		3-11 kW	4-16 kW	10-36 kW	10-52 kW		3-12 kW	5-19 kW	13-46 kW	16-67kW
Energy Class VL35 °C		A+++	A+++		A+++	A+++	A+++	A+++		A+++	A+++	A+++	A+++
Energy Class VL55 °C		A+++	A+++		A+++	A+++	A+++	A+++		A+++	A+++	A+++	A+++
Max. Flow temperature		up to 62 °C			up to 62 °C					up to 62 °C			
SCOP 35 °C	Climate: average	5,81	6,03	Climate: average	5,29	5,51	5,1	5,42	Climate: average	6,71	6,63	6,66	6,58
η s 35 °C [%]		231	240		206	217	200	214		265	262	263	260
SCOP 55 °C		4,23	4,11		3,96	4,28	3,9	4,01		5,01	4,96	4,88	4,83
η s 55 °C [%]		168	163		155	168	151	157		197	195	192	190
Performance Data acc. EN14511													
Heating output [kW]	E4/W35 at 54 % Heating Output	6,88	10,70	B0/W35 at 54 % Heating Output	5,78	8,94	17,9	25,9	W10/W35 at 54 % Heating Output	6,6	11,52	23,8	34,20
Power Consumption [kW]		1,3	1,91		1,22	1,89	3,65	5,2		1,03	1,86	3,5	5,18
Coeff. of Performance [COP]		5,31	5,6		4,74	4,72	4,9	5,0		6,42	6,21	6,8	6,60
Heating output [kW]	E4/W35 - 5K at 100 % Heating Output	12,76	19,95	B0/W35 - 5K at 100 % Heating Output	10,64	15,76	36,0	52,0	W10/W35 - 5K at 100 % Heating Output	12,21	19,05	46,4	67,10
Power Consumption [kW]		2,76	4,2		2,41	3,61	8,18	11,8		2,12	3,40	8,14	12,22
Coeff. of Performance [COP]		4,62	4,66		4,42	4,36	4,4	4,35		5,75	5,61	5,7	5,49
Heating output [kW]	E4/W55 - 8K at 100 % Heating Output	10,05	16,42	B0/W55 - 8K at 100 % Heating Output	8,99	14,26	33,4	47,7	W10/W55 - 8K at 100 % Heating Output	11,52	18,15	41,6	59,20
Power Consumption [kW]		3,22	5,15		3,05	4,95	11,5	16,4		3,22	5,16	11,89	17,94
Coeff. of Performance [COP]		3,12	3,19		2,95	2,88	2,9	2,91		3,58	3,52	3,5	3,30
Min Power Output [kW]	E4/W35	3,3	5,1	B0/W35	2,8	4,4	10,5	10,5	W10/W35	2,8	5,2	13,2	13,20
Min Power Output [kW]	E4/W55	4,1	6,2	B0/W55	3,5	5,2	14,5	14,5	W10/W55	3,5	6,3	18,80	18,80

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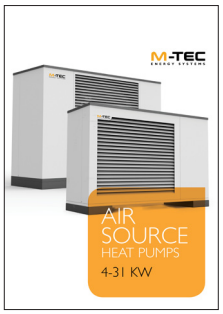
THE NEW GENERATION

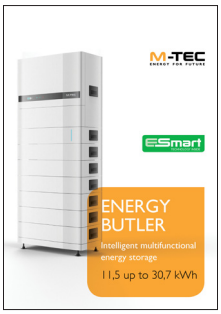
Distribution Partner

Please request our current brochures without obligation:

Brochure WPS26-V2
GSHP, Range 2-6 kW



Brochure WPLK
ASHP, Range 2-17 kW



Brochure ENERGY
BUTLER, 11,5-30,7kWh

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