



德国思帕热泵综合样册
Produktkatalog 2020
product catalogue



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位于Rostock的公寓从周围130幢公寓楼进行空气热回收，用于制备生活热水。
Apartment block in Rostock
Exhaust air heat recovery from 130
apartments, used for preparation of domestic
hot water

SmartHeat 热泵——可实现远程控制
SmartHeat heat pumps – remote control

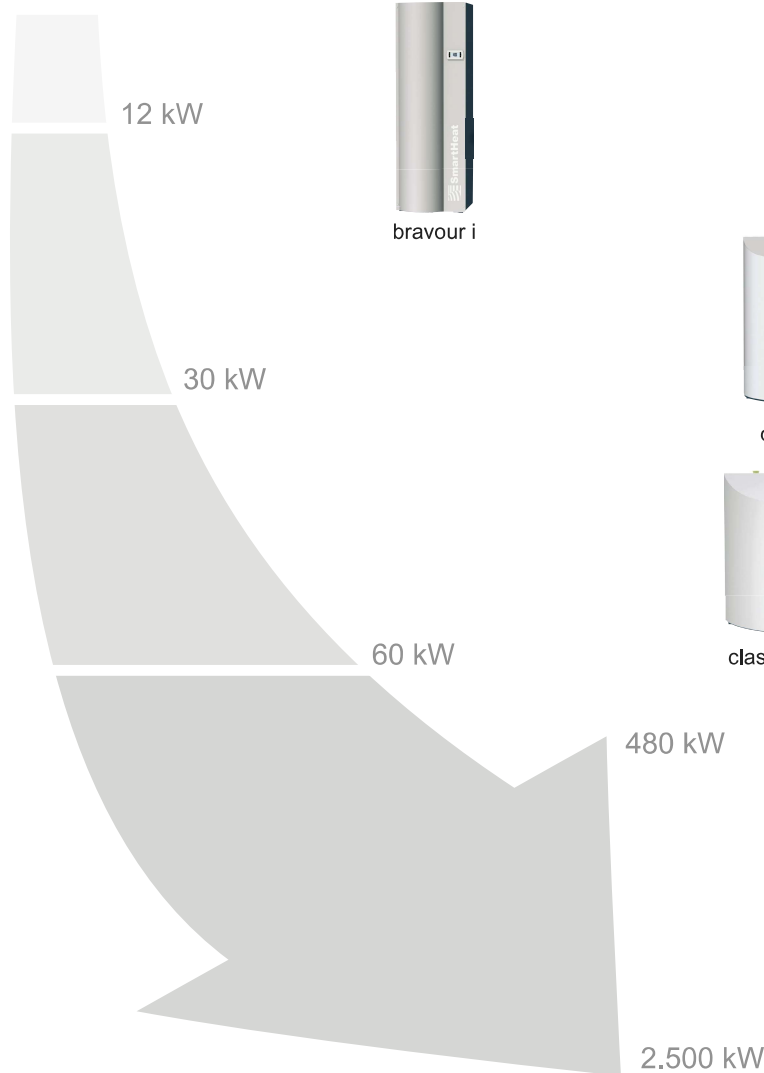
功率范围
Capacity range

bravour i

classic i

aero

Titan



bravour i



classic i



classic power i



aero 004i-014i



aero 028i/2-056i/2



aero plus 044



aero plus 088



aero 168
aero plus 176



Titan i



Titan



Titan

- 1) bravour-Energieeffizienz Kombiheizgeräte energy efficiency combination heaters
- 1) Energieeffizienz Raumheizgeräte energy efficiency space heaters
- 2) Energieeffizienz(Verbundanlage) Raumheizgerät mit Temperaturregler energy efficiency package of space heater and temperature control
- >> Energieeffizienzklasse nach EU-Verordnung Nr.811/2013, durchschnittliche Klimaverhältnisse -Temperaturanwendung (W55 bzw. W35)
- >>energy efficiency of EU-Journal Nr.811/2013, average climate conditions -temperature(W55 or W35)



SmartHeat 公司坐落于德国居斯特罗，成立 30 年来一直致力于发展热泵技术，在利用可再生能源的领域不断开拓创新。Smartheat 生产的高性能热泵产品在建筑设计师，暖通设计师和安装公司业内均积累了很好的口碑。公司旗下现有 SmartHeat 和 Spartek 两个品牌，产品包括定频和变频的水地源，空气源热泵及定制产品。不论空调系统是从周围空气还是太阳能中提取能量，SmartHeat 热泵都会是一个最优的空调系统设备选择。此外，SmartHeat 热泵同样为地热设备，为工业废热和工艺热回收提供了最佳解决方案。

热泵是帮助减少 CO2 排放的核心设备。在德国，大约 40% 的 CO2 排放都来自于供热和生活热水系统。对于住宅、办公楼和商业建筑包括厂房的空调系统来说，热泵更好的替代了传统高排放设备。

2015 年，仅在德国新安装的热泵设备就达到了 70000 多台（数据来源德国热泵协会）。

智能化利用能源、提高系统能效正是我们的终极目标。

> 客户定制与产品增值

为什么SmartHeat公司生产的热泵如此出色？我们除了生产标准型号的热泵以外，为住宅、商业建筑及工厂厂房等建筑定制大型热泵机组，另外还可根据特殊工况要求定制特型热泵。所有产品都是在公司工厂内生产，并且都进行过多项目严格的质量和性能测试。是公司富有创新精神的优秀员工们保证了现有热泵产品的高质量，并对热泵的未来充满信心。

SmartHeat系列热泵产品有最高的COP（性能系数）值和能耗等级，它能配合智能电网运行，也可以轻松集成到现有空调和设备管理系统中。我们为新建和改建工程都提供了解决方案，无论是单户住宅还是区域能源供给中心，我们的产品质量都能够满足客户的要求。

SmartHeat公司的企业宗旨很简单：使用高效技术和前沿科技，推动可再生能源的利用，使之成为传统化石能源的代替者，同时保持低运行成本和高能效。

> 优化的能源管理控制系统

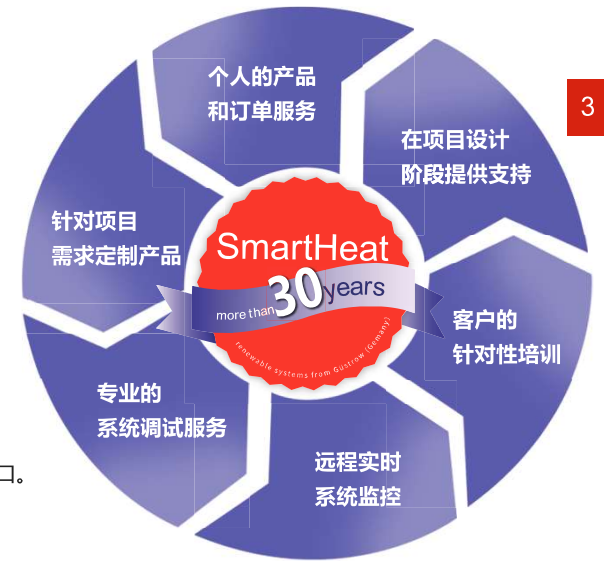
我们开发的多功能智能控制系统(Smic)使客户能按照其设定并结合建筑实际的情况，来调节设备运行工况和输出。同时还能实现网络远程访问，以便工程师或设备管理员实时监控热泵性能，调节相关的性能参数。不仅如此，SmartHeat热泵可以连接智能电网，并预留可以集成到电力系统或光伏电站的通讯接口。

> SmartHeat一直在热泵技术的尖端

现代空调系统的需求在不断地变化。我们优秀的开发团队、工程师、技术员、设计师和程序员一直跟随着最新的技术发展方向，并不断地对Smarthheat系列热泵产品提出改进方案。

SmartHeat最新的优秀设计成果当属bravour和classic power系列，还有最大功率可达168kW的空气源热泵。在高效热泵技术领域的先锋造诣为SmartHeat 带来很多奖项和认证，包括数个设计技术认证，VR技术奖，DGS太阳能奖，中小型企业大奖赛等等。我们为所获得的荣誉感到自豪同时也将激励我们朝着这个方向发展。

另一个创新点：SmartHeat公司是第一家把变频技术集成到热泵设备中的厂家。一直以来，热泵只能在一定负荷下运行，通过控制启停改变其输出功率。而通过SmartHeat公司创新的变频技术方案，我们的产品可以实现根据实际的制冷制热的负荷需求无级自动调节压缩机转速从而实现系统节能，进而提高制热季节性能系数(HSPF)和季节能效比(SEER)，并延长设备的使用寿命。



SmartHeat现有的众多变频热泵产品中包括 bravour i（高集成度设备，2001年获奖设计），classic i，classic power i，aero i 和Titan i系列。这些热泵产品集成了我们先进的变频技术和智能控制系统（smic），保证了我们的机器在全负荷和部分负荷工况下都可以稳定和高效的运行，而且系统的控制，调节和运行监控都十分简便。

> SmartHeat 极简主义

SmartHeat与德国及全世界领先的零部件制造商合作，为客户提供最好的质量和效率保证。我们对创新的热情保证了热泵技术的发展。作为技术引领者，我们会为客户提供量身定制的最尖端热泵技术和产品，无论项目有什么需求，在SmartHeat都一定能找到最好的解决方案。

全球先进技术-Made in Germany
SmartHeat-full of energy and ideas

SmartHeat Deutschland GmbH - heat pump experts for more than 30 years



For more than 30 years, SmartHeat based in Güstrow has been supplying the market with heat pumps and other innovative solutions for renewable energies. Our commitment to heat pump technology and our innovative drive have made SmartHeat Deutschland GmbH the preferred partner of planners, architects and installers. SmartHeat is technology partner for heating and cooling systems that extract heat from the ambient air or sunlight. SmartHeat also provides solutions for geothermal installations and the recovery of energy from waste and process water.

Heat pumps will remain a key component of systems that help reduce CO₂ emissions. Around 40 per cent of the CO₂ emissions in Germany stem from heating and DHW systems. Heat pumps are the preferred option for the heating and cooling of homes, offices and commercial premises including factory halls. In 2015, around 70,000 new heat pumps were installed in Germany alone (source: bwp e.V.).

Smart use of energy – for greater energy efficiency.

> Smart and adding value

What makes SmartHeat so special? We produce standard heat pumps, custom-engineered small series, units for special operating conditions as well as large heat pumps for apartment blocks, commercial and industrial premises and much more. All units are produced at our own factory and undergo extensive performance and quality tests. Our highly

qualified and committed employees believe in the future of heat pumps and are constantly coming up with new ideas.

SmartHeat heat pumps offer unrivalled COPs, are designed for smart grid operation and can be easily integrated into existing heating and facility management systems. SmartHeat offers solutions for both new buildings and restoration projects – from family homes to apartment blocks and energy-efficient cold district heating systems. Our quality products meet the expectations of our clients.

SmartHeat's philosophy is simple: promoting renewable energies as a cost-efficient alternative to fossil fuels through the production and marketing of highly efficient technical equipment.

> Energy management made easy – for optimised control

The programmable SmartHeat multi intelligent control (smic) system enables clients to adjust the heating operation and output to suit their needs and the requirements of the actual building. The smic system allows for remote access through the internet, so that operators or facility managers can constantly monitor and control all relevant performance parameters.

Smart grid ready heat pumps from SmartHeat come fully equipped with communication ports for integration into electric power grids or photovoltaic plants.

> Advanced system technology

The requirements for modern heating systems are changing all the time. The SmartHeat development team of engineers, technicians, designers and programmers are keeping pace with the latest developments and constantly come up with innovative solutions.

Among their pioneering designs are the SmartHeat compact heat pumps of the bravour and classic power series, and air/water heat pumps with ratings of up to 168 kW, to mention just a few.

With these and other milestones in efficient heat pump technology, SmartHeat has won a number of prizes and awards, such as the Solar Award of DGS. SmartHeat also was among the finalists for the Grand Prix of Small and Medium Business. We are proud of our awards, which of course encourage us to continue on our road towards a more environmentally future.

SmartHeat was for instance among the first companies to integrate inverter technology into its heat pump solutions. Up to recently, heat pumps were only able to operate at one power level, and the heat output was controlled by switching the pump on and off. This all changed with the innovative inverter solutions from SmartHeat. They allow for continuous pump speed adjustment, based on the actual heating or cooling requirements, which is much more energy-efficient. In addition, SmartHeat heat pumps with inverters offer unrivalled seasonal energy performance ratios (SEPR) and have a longer service life.

The bravour i is just one of many SmartHeat series equipped with modern inverter logics for continuous output control, achieving excellent energy efficiency ratings. The design of these compact heat pumps made in Germany is based on a device platform that won the Technology Award as far back as 2001.

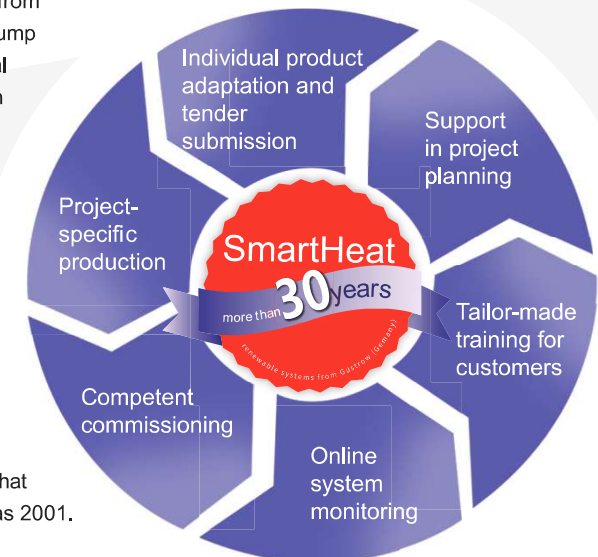
The SmartHeat heat pumps of the classic i and classic power i series also come with our advanced inverter technology. This means that they are not only extremely reliable and highly efficient in partial load mode, but also easier to regulate.

> Simply SmartHeat

In our development projects, we cooperate with leading component manufacturers from Germany and abroad. We are therefore able to offer our clients the best possible solutions for their projects. When it comes to quality and efficiency, we never compromise.

Thanks to our passion for innovation, we already have the answers to the big questions arising in the renewable energy and heating sector in the future. As a technology leader, we offer custom-engineered solutions that are not only future-proof but reflect the latest developments in technology. Whatever your project – SmartHeat has the technology. SmartHeat products and solutions have been proven to reduce the heating and cooling costs for industrial, commercial and residential buildings.

Technology used all over the world.
Made in Germany.
SmartHeat – full of energy and ideas.



SmartHeat classic i

地源热泵

Water/Water heat pumps

**eco INVERTER
TECHNOLOGIE**

NEW



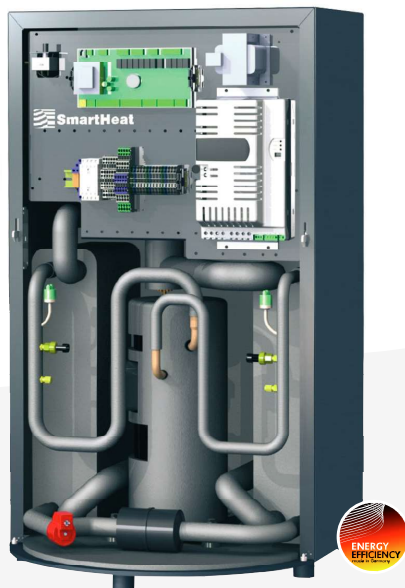
SmartHeat classic
单户和多户住宅理想方案
Ideal for detached and semidetached
homes



**Best selling
2018**



**15 classic
years**



classic i

A +++⁴⁾



扫一扫
进入德国网站

SERIE classic i

SmartHeat classic i 系列产品灵活性强并且可用于制热、制冷以及热水储备(可选外部储水系统)。SmartHeat classic i 系列产品的功率范围为 2 - 35 kW, 选择高效压缩机是使热泵全年运行的最有效解决方案。产品配备了先进的变频技术, 结合电子膨胀阀, 可为系统提高COP值以降低能耗, 同时也可大大减小储水箱体积。多种可选附件使SmartHeat classic i系列热泵的灵活性位居市场前列, 能满足任何项目的需求。因此 Smartheat classic i 是新能源被动房和改造系统升级改造项目的首选方案。

类型: 水/水 水/盐水溶液

功率范围: 2 - 35 kW (制冷)

COP: B0/W35高达4.82 W10/W35高达 6.10

优势一览:

> 性能出众

- »» 能效等级达到欧洲A+++级别 (最高)
- »» 高精度水温控制, 精度高达 $\pm 0.1^{\circ}\text{C}$
- »» COP最高可达6.10 (W10/W35)
- »» 变频压缩机
- »» 最高出水温度可达 60°C

> 静音设计

- »» 多种静音设计, 绝大部分时间运行低于50dBA
- »» 多重减震措施, 减少共振
- »» 双层外壳, 隔绝噪音
- »» 机组内部采用世界顶级消音材料
- »» 德国工匠精神精工打造

> 智能节能

- »» 多功能智能控制(Smic)系统
- »» 卡乐控制器, 变频器, 运行逻辑自主研发
- »» 可接入物联网, 全机上百个参数一目了然, 足不出户解决售后问题
- »» 齐全自动保护功能, 大部分能自动复位 (保护主机同时又能减少维护)

Serie classic i

Heat pumps of the SmartHeat classic i series offer unrivalled flexibility and can be used for heating, cooling and hot water preparation (with or without chosen external storage system of your choice). The SmartHeat classic i units are designed for an output range from 2 - 35 kW, where high-efficiency compressors are the most effective solution for year round operation.

Advanced inverter technology combined with an electronic expansion valve guarantees high COPs and low consumption costs. In addition, the size of the buffer storage tanks can be significantly reduced. The wide range of available extras and accessories make the SmartHeat classic i one of the most versatile heat pumps in the market, as these units can be adapted to meet virtually any project requirements. SmartHeat classic i units are therefore widely used in projects as diverse as new passive energy houses and heating system renovations.

Types: water/water Brine/water

Capacity range: 2 - 35 kW (Cooling)

COP: B0/W35 up to 4.82 W10/W35 up to 6.10

Advantages at a glance:

> Good Performance

- » Efficiency level reaches A+++ in Europe(Highest)
- » Flow water temperature control accurately, the accuracy of temperature control is $\pm 0.1^{\circ}\text{C}$
- » High COP, up to 6.10(W10/W35)
- » Frequency conversion compressor
- » Max. heating flow temperature up to 60°C

> Silence

- » Sound-insulated, sound pressure less than 50dBA
- » Multi-stage vibration decoupling
- » Double-deck housing
- » The interior of unit use the well-known sound-insulated materials
- » Made by German craftsman spirit, superb assembly process and strict quality process control

> Intelligence

- » Smart multi-function control (smic) system
- » Controller and inverter supplied by Carel, control logic is developed by SmartHeat
- » Could be connected to the Internet of Things, parameters are easy to read, after-sales can be solved remotely
- » Complete automatic protection functions. Most of which can be reset automatically(protecting the equipment while reducing maintenance)



产品名称 Description 产品编号 Order Number	压缩机 类型 Compressor	压缩机 数量 Compressor	工况 Operation Point		性能参数 Performance Data 1)								尺寸 HxWxD Dimensions HxWxD 2)	约重量 Approx. Weight		
					压缩机 转速 Revolutions Per Second	制热/ 制冷量 Heating/ Cooling Capacity	用户侧 水流量 Water Flow for User	用户侧 水压降 Pressure Drop of User	地源侧 水流量 Water Flow for Source	地源侧 水压降 Pressure Drop of Source	输入 功率 Power Input	运行 电流 Current			制热/制冷 能效比 COP/EER	
						[kW]	[m³/h]	[kPa]	[m³/h]	[kPa]	[kW]	[A]	-	[mm]	[Kg]	
SmartHeat classic 032i H055007032	变频涡旋式 Inverterscroll	1	制热 Heating	地暖供暖 Floor Heating	W10 / W45	min (20rps)	5.27	0.91	/	1.18	/	1.21	12.32	4.36	外壳尺寸 dimensions of housing 1060 x 600 x 620 带接口 with connections 1060 x 600 x 700	160
					max (120rps)	31.65	5.46	13.1	6.89	26.20	8.05	15.45	3.93			
				毛细辐射供暖 Capillary Ceiling	W10 / W35	min (20rps)	5.57	0.96	/	1.33	/	0.98	10.52	5.71		
					max (120rps)	33.22	5.73	14.77	7.77	28.13	6.44	12.44	5.11			
			制冷 Cooling	风机盘管 Fan Coil Unit	W25 / W7	min (20rps)	5.07	0.87	/	1.01	/	0.81	8.92	6.30		
					max (120rps)	29.50	5.09	12.19	5.98	26.23	5.43	10.49	5.43			
				毛细冷吊顶 Capillary Ceiling	W25 / W16	min (20rps)	6.38	1.10	/	1.26	/	0.98	10.20	6.53		
					max (120rps)	35.04	9.96	24.6	6.02	29.76	5.82	13.02	6.02			

产品名称 Description 产品编号 Order Number	最大电 流输入 Max.Current Consumption	电源输入 Power Supply	最高出 水温度 Max.Flow Temperature	用户侧 接管管径 Pipe Diameter for User	地源侧 接管管径 Pipe Diameter for Source	能效标签 Energy Label		制冷剂 Refrigerant	制冷剂 重量 Refrigerant Weight	润滑油 型号 Model of Lubricating Oil	润滑油 重量 Weight of Lubricating Oil	噪音 水平 Sound Pressure Level	建议电源 线径 Suggest Wire Diameter	建议 空开 Suggest Air Switch
						配合一 般末端 Space Hearts 3)	配合智能 温控末端 Smart Package 4)							
	[A]	[V,Ph,HZ]	[°C]	—	—			—	[Kg]	—	[L]	[dB(A)]	[mm²]	[A]
SmartHeat classic 032i H055007032	24	400;3;50	60	1 1/4"	1 1/4"	A++	A+++	R407c	4.4	FV50S	1,90	32-43	6	32

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SmartHeat classic power i

地源热泵

Water/Water heat pumps

A+++⁴⁾

eco INVERTER
TECHNOLOGIE



NEW



classic power i

SmartHeat classic power i
单户和多户住宅理想方案
Ideal for detached and semidetached
homes

2019
Best Selling



classic power i



扫一扫
进入德国网站

SERIE classic power i

SmartHeat classic power i 系列热泵功能多样，可以安装在任何大小的独栋别墅和公寓中。

Classic power i 可以作为地源热泵使用，可实现制热制冷模式。SmartHeat classic power i 标准系列热泵使用现代变频技术。这意味着热泵可在部分负荷下也可以高效率运行，并容易调节。它集成其他部件如膨胀水箱、高效循环水泵、流量监测设备等。

SmartHeat classic power i 系列热泵可以以高集成度的形式安装在新建筑或者改建工程中。

经过数次检测试验的高效变频技术，可实现多个 classic power i 热泵联合工作，在不影响系统工作的情况下提高了输出功率。这类系统广泛适用于各类工程。

类型：水/水 水/盐水溶液

功率范围：2 - 35 kW (制冷)

COP：B0/W35高达4.82 W10/W35高达 6.10

优势一览：

> 性能出众

- »» 能效等级达到欧洲A+++级别（最高）
- »» 高精度水温控制，精度高达 $\pm 0.1^{\circ}\text{C}$
- »» COP最高可达6.10 (W10/W35)
- »» 全变频设备（压缩机，水泵）
- »» 最高出水温度可达 60°C

> 静音设计

- »» 各种静音设计，绝大部分时间运行低于50dBa
- »» 多重减震措施，减少共振
- »» 双层外壳，隔绝噪音

- »» 机组内部采用世界顶级消音材料
- »» 德国工匠精神精工打造

> 智能节能

- »» 多功能智能控制(Smic)系统
- »» 卡乐控制器，变频器，运行逻辑自主研发
- »» 可接入物联网，全机上百个参数一目了然，足不出户解决售后问题。
- »» 齐全的自动保护功能，大部分能自动复位（保护主机同时又能减少维护）

Serie classic power i

The classic power i heat pumps are extremely versatile and can be configured and equipped for installation in detached houses and in apartment blocks of virtually any size. The units of the SmartHeat classic power series are available as brine/water or water/water heat pumps for reliable heating and cooling. The heat pumps of the classic power i series come with advanced SmartHeat inverter technology as standard. This means that they are not only extremely reliable and highly efficient in partial load mode, but also easier to regulate. In addition, they can be equipped with various customised add-on components such as expansion vessels, high-efficiency circulating pumps and flow monitoring devices. The models of the classic power series from SmartHeat are shipped as fully assembled units ready for installation in new buildings and renovation projects.

By installing multiple classic power i heat pumps in a cascade, higher outputs can be achieved without compromising the safety of the system, thanks to the use of tried and tested frequency-controlled inverter technology. These powerful systems are suitable for a broad range of applications.

Types: water/water Brine/water

Capacity range: 2 - 35 kW (Cooling)

COP: B0/W35 up to 4.82 W10/W35 up to 6.10

Advantages at a glance:

> Good Performance

- » Efficiency level reaches A+++ in Europe(Highest)
- » Flow water temperature control accurately, the accuracy of temperature control is $\pm 0.1^{\circ}\text{C}$
- » High COP, up to 6.10(W10/W35)
- » Full frequency conversion unit (including compressor and water pump)
- » Max. heating flow temperature up to 60°C

> Silence

- » Sound-insulated, sound pressure less than 50dBa
- » Multi-stage vibration decoupling
- » Double-deck housing
- » The interior of unit use the well-known sound-insulated materials
- » Made by German craftsman spirit, superb assembly process and strict quality process control

> Intelligence

- » Smart multi-function control (smic) system
- » Controller and inverter supplied by Carel, control logic is developed by SmartHeat
- » Could be connected to the Internet of Things, parameters are easy to read, after-sales can be solved remotely
- » Complete automatic protection functions. Most of which can be reset automatically(protecting the equipment while reducing maintenance)



产品名称 Description 产品编号 Order Number	压缩机 类型 Compressor	压缩机 数量 Compressor	工况 Operation Point		性能参数 Performance Data 1)								尺寸 HxWxD Dimensions HxWxD 2)	约重量 Approx. Weight		
					压缩机 转速 Revolutions Per Second	制热/ 制冷量 Heating/ Cooling Capacity	用户侧 水流量 Water Flow for User	用户侧 水压降 Pressure Drop of User	地源侧 水流量 Water Flow for Source	地源侧 水压降 Pressure Drop of Source	输入 功率 Power Input	运行 电流 Current			制热/制冷 能效比 COP/EER	
						[kW]	[m³/h]	[kPa]	[m³/h]	[kPa]	[kW]	[A]	-	[mm]	[Kg]	
SmartHeat classic power 032i H055107032	变频涡旋式 Inverterscroll	1	制热 Heating	地暖供暖 Floor Heating	W10 / W45	min (20rps)	5.27	0.91	/	1.18	/	1.21	12.32	4.36	外壳尺寸 dimensions of housing 1060 x 900 x 700 带接口 with connections 1100 x 900 x 700	250
					max (120rps)	31.65	5.46	13.1	6.89	26.20	8.05	15.45	3.93			
				毛细辐射供暖 Capillary Ceiling	W10 / W35	min (20rps)	5.57	0.96	/	1.33	/	0.98	10.52	5.71		
					max (120rps)	33.22	5.73	14.77	7.77	28.13	6.44	12.44	5.11			
			制冷 Cooling	风机盘管 Fan Coil Unit	W25 / W7	min (20rps)	5.07	0.87	/	1.01	/	0.81	8.92	6.30		
					max (120rps)	29.50	5.09	12.19	5.98	26.23	5.43	10.49	5.43			
				毛细冷吊顶 Capillary Ceiling	W25 / W16	min (20rps)	6.38	1.10	/	1.26	/	0.98	10.20	6.53		
					max (120rps)	35.04	9.96	24.6	6.02	29.76	5.82	13.02	6.02			

产品名称 Description 产品编号 Order Number	最大电 流输入 Max.Current Consumption	电源输入 Power Supply	最高出 水温度 Max.Flow Temperature	用户侧 接管管径 Pipe Diameter for User	地源侧 接管管径 Pipe Diameter for Source	膨胀罐 容积 Tank Volume for Source	能效标签 Energy Label		制冷剂 Refrigerant	制冷剂 重量 Refrigerant Weight	润滑油 型号 Model of Lubricating Oil	润滑油 重量 Weight of Lubricating Oil	噪音 水平 Sound Pressure Level	建议电源 线径 Suggest Wire Diameter	建议 空开 Suggest Air Switch
							配合一 般末端 Space Heats 3)	配合智能 温控末端 Smart Package 4)							
	[A]	[V,Ph,HZ]	[°C]	—	—	[L]			—	[Kg]	—	[L]	[dB(A)]	[mm²]	[A]
SmartHeat classic power 032i H055007032	24	400;3;50	60	1 1/2"	1 1/2"	12L/12L	A++	A+++	R407c	4.4	FV50S	1.90	32-43	6	32

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SmartHeat bravour i

水—水热泵

Water/Water heat pumps

**eco INVERTER
TECHNOLOGIE**



15 bravour
years



bravour i



SmartHeat bravour
适用于被动房和低能耗房

SmartHeat bravour for passive
and low energy house

研发于2000年，在2001年获得科技奖，并在之后的15年从未停止技术的更新，今天的SmartHeat bravour 是市场中质量最高、能效最高、设计最紧凑的热泵之一。SmartHeat bravour 达到了制热、制冷环境友好，创新且高能效的要求。

Developed in 2000 and already awarded with the technology prize in 2001, the last 15 years has not stopped to keep the technology up to date. Today SmartHeats bravour is one of the highest quality and most powerful compact heat pumps on the market. SmartHeat bravour meets requirements for heating and cooling environmentally friendly, innovative and energy efficient.

A+++³⁾



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SERIE bravour i

Smartheat bravour i产品是一个整机组装产品，它可以用于各种不同的热源系统。

集成带水力隔离功能的不锈钢双盘管水箱，以保证操作安全和生活热水制备。所有的组件均有效运作，如循环泵，三通阀和快速加热盘管均原厂安装。高效变频压缩机和电子膨胀阀保证了高季节能效比和低能耗。标准热泵组件可以与高效压缩机以及现代变频器结合，这些可供选择的附件把Smartheat bravour i产品集成了一个完整的设备管理系统，它可以用于制热、制冷和热水储备，并可选额外的太阳能输入。

类型：水/水 水/盐水溶液

功率范围：2 - 18 kW (制冷)

COP：W10/W35高达6.52 B0/W35高达4.82

优势一览：

- »» 制冷，制热，热水三位一体
- »» 全变频设备（压缩机，水泵）
- »» 高效双回转式压缩机，电子膨胀阀
- »» 不锈钢双盘管水箱，自带膨胀罐功能
- »» 储水量约为200升，几乎不需维护
- »» 标配6KW快速加热盘管
- »» 可连接利用太阳能
- »» 自带三通换向阀
- »» 最高出水温度可达60°C
- »» 多功能智能控制(Smic)系统
- »» 机组内部采用世界顶级消音材料
- »» 自带高效泵，作用于制热和热水

- »» 能效等级达到欧洲A+++级别（最高）
- »» 卡乐控制器，变频器，运行逻辑自主研发
- »» 德国工匠精神精工打造
- »» 齐全自动保护功能，大部分能自动复位（保护主机同时又能减少维护）

Serie bravour i

The SmartHeat bravour i is a fully assembled, compact heat pump designed for use with various heat source systems. The large integrated stainless steel double shell tank with hydraulic decoupling function ensures optimum operational safety and ample hot water.

All components required for efficient operation, such as circulating pumps, 3-way valves and quick heat coil, are factory-installed.

Highly efficient inverter compressors with electronic expansion valves guarantee high seasonal energy performance ratios and low energy costs.

The standard heat pump assemblies can be combined with a range of optional accessories to turn the SmartHeat bravour i into a complete facility management system for heating, cooling and DHW, with or without additional solar energy input.

Types: water/water Brine/water

Capacity range : 2 - 18 kW (Cooling)

COP: W10/W35 up to 6.52 B0/W35 up to 4.82

Advantages at a glance:

- »» Integrating cooling, heating and DHW
- »» Full frequency conversion unit (compressor, pump)
- »» Large copper brazed stainless steel heat exchanger
- »» High-efficiency double rotary compressor, electronic expansion valve
- »» Stainless steel double coil water tank with built-in expansion tank function
- »» Water storage capacity is about 200 liters, hardly requiring maintenance
- »» Standard 6KW fast heating coil
- »» Reasonable space design for easy maintenance
- »» Multi-stage vibration decoupling, reducing resonance
- »» Smart multi-function control (Smic) system
- »» Use well-known sound-absorbing materials
- »» Built-in high-efficiency pump for heating and hot water
- »» Efficiency level reaches A+++ in Europe (highest)
- »» Carel controllers and inverters the program logic is developed by SmartHeat
- »» Made by German craftsman spirit, superb assembly process and strict quality process control
- »» Complete automatic protection functions, most of which can be reset automatically (protecting the equipment while reducing maintenance)



产品名称 Description 产品编号 Order number	制冷剂 Refrigerant	压缩机类型 Compressor	工况 Operation point		性能参数 Performance data 1)					最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		制冷剂重量 Refrigerant weight	噪音水平 Sound Pressure Level	
					压缩机转速 Revolutions per second	制热/ 制冷量 heating/ cooling capacity	输入 功率 Power input	运行 电流 Current	制热/ 制冷能 效比 COP/ EER							[A]	[V]; [Ph]; [Hz]			[°C]
SmartHeat bravour 010 i H055009010	R410a	变频转子式 Inverter- rotary	制热 Heating	地暖供暖 Floor Heating	W10 / W45	min (30rps)	2.40	0.55	4.93	4.34	12	230 ; 1 ; 50	60	1"	1970 x 650 x 700	260	A++	A+++	2.0	34
						max (130rps)	11.89	2.97	8.88	4.01										
				毛细辐射供暖 Capillary ceiling	W10 / W35	min (30rps)	2.51	0.41	3.69	6.12										
						max (130rps)	12.50	2.34	7.13	5.33										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7	min (30rps)	1.94	0.40	3.01	4.86										
						max (130rps)	9.45	2.15	5.10	4.40										
				毛细冷吊顶 Capillary ceiling	W25 / W16	min (30rps)	2.71	0.36	2.72	7.56										
						max (130rps)	12.70	2.00	4.65	6.34										
SmartHeat bravour 016 i H055009016	R410a	变频转子式 Inverter- rotary	制热 Heating	地暖供暖 Floor Heating	W10 / W45	min (30rps)	3.15	0.73	6.31	4.31	16	230 ; 1 ; 50	60	1"	1970 x 650 x 700	260	A++	A+++	2.0	34
						max (130rps)	16.14	4.38	13.61	3.99										
				毛细辐射供暖 Capillary ceiling	W10 / W35	min (30rps)	3.31	0.54	4.57	6.12										
						max (130rps)	16.95	3.60	10.82	4.69										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7	min (30rps)	2.90	0.55	4.33	5.29										
						max (130rps)	13.26	2.16	12.16	6.14										
				毛细冷吊顶 Capillary ceiling	W25 / W16	min (30rps)	3.91	0.52	3.98	7.56										
						max (130rps)	18.38	3.65	10.78	5.04										

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

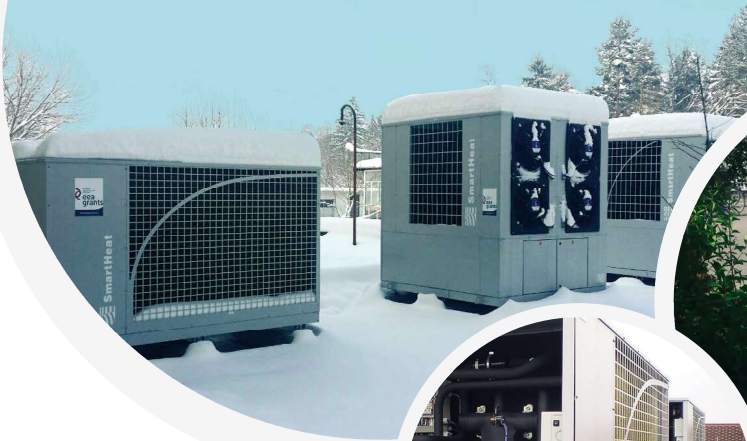
>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SmartHeat aero i & aero plus & aero

空气/水 - 热泵
Air/Water heat pumps

A+++⁴⁾



SmartHeat aero 088 plus
和 aero168 联合使用
SmartHeat aero 088
plus units in aero168



SmartHeat aero 088
多台机组串联使用
SmartHeat aero 088
units in cascade
arrangement

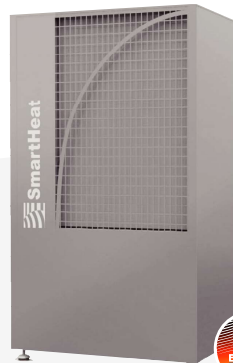


aero 004i/008i/010i/014i

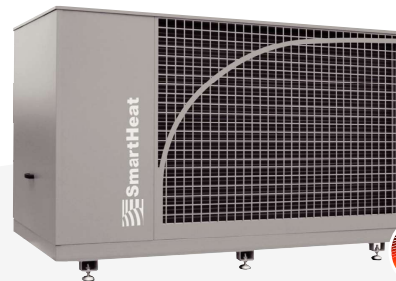


aero 032i
aero 028i/2

NEW



aero plus 044
aero 056i/2



aero plus 088



aero 168
aero plus 176

aero i &
aero plus



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SERIE aero i

SmartHeat aero i 系列是多功能小型空气/水热泵,可室外安装。我们为50kW以下的热泵配备了最新的变频压缩技术(aero i 系列),使之能根据外界空气温度和室内负荷的变化随时调整功率。热泵内置了高效变频压缩机,同时配置世界一流品牌的变频器,电子膨胀阀,可在低运行成本下达到高COP值。

类型:空气/水

功率范围:2-49 kW(制冷)

COP: A7/W35高达6.06

优势一览:

- »» 能效等级超过国内一级(最高)
- »» 出口欧洲,满足EN 61000及EN 55014欧标
- »» 获得TUV认证及国内3C认证
- »» 全变频设备(压缩机,水泵,风扇)
- »» 三菱压缩机,阿法拉伐/苏瑞普板换,格兰富/威乐水泵
- »» 噪音最低至49dBA



Series aero i

The SmartHeat aero i is a versatile, compact air/water heat pump for outdoor installation. Up to 50 KW, the aero i is available as an inverter-controlled heat pump for optimised output control based on the actual heat requirements, even as outdoor temperature changes. The heat pump has built-in high-efficiency inverter compressors and well-known brand inverters and electronic expansion valves, which can achieve a high COP at low operating costs.

Types: air/water

Capacity range: 2 - 49 kw (cooling),

COP: A7/W35 up to 6.06

Advantages at a glance:

- » Energy efficiency level reaches the top level
- » Export to Europe, meet European standards EN 61000 and EN 55014
- » Pass TUV and 3C certification
- » Full frequency conversion unit (including compressor, water pump, fan)
- » Compressor supplied by Mitsubishi, heat exchanger supplied by Alfa Laval/SWEP,
- » water pump supplied by Grundfos/Wilo
- » Sound pressure min 49dBA

Aero 028i/2 056i/2

专为户式辐射系统量身定制,内置双变频压缩机循环,分别供给辐射系统用高温冷水低温热水以及新风机除湿用氟。

> 独特定制

- »» 专为中国气候特征下的户式系统量身定制
- »» 温湿度独立控制型主机,一氟一水
- »» 与配套新风机共同使用,具有强大除湿能力(如需新风机请另询)

> 性能出众

- »» 能效等级达到欧洲A+++级别(最高)
- »» 高精度水温控制,精度高达 $\pm 0.1^{\circ}\text{C}$
- »» 独有的智能除霜逻辑,保证最小化霜时间
- »» 全变频设备(压缩机,施乐百风扇)
- »» 最高出水温度可达 60°C
- »» 翅片特殊涂层处理,间距大,可机械防霜

> 静音设计

- »» 多重减震措施,减少共振
- »» 双层外壳,隔绝噪音
- »» 机组内部采用世界顶级消音材料
- »» 德国工匠精神精工打造

> 智能节能

- »» 多功能智能控制(Smic)系统
- »» 卡乐控制器,变频器,运行逻辑自主研发可接入物联网
- »» 齐全自动保护功能,大部分能自动复位(保护主机同时又能减少维护)



Special design for capillary air conditioning system including double compressors with inverter technology. It can provide cooling or heating water for radiant system and refrigerant for dehumidification at the same time.

> Unique Customized

- » Design for Chinese climate
- » Provide cooling or heating water for radiant system and refrigerant for dehumidification at the same time
- » Match the fresh air dehumidify unit

> Good Performance

- » Efficiency level reaches A+++ in Europe(Highest)
- » Flow water temperature control accurately, the accuracy of temperature control is $\pm 0.1^{\circ}\text{C}$
- » Intelligent defrosting logic, ensure the minimum frost time
- » Full frequency conversion unit (including compressor and fan)
- » Max. heating flow temperature up to 60°C
- » Special coating treatment of fins, with anti-frost function

> Silence

- » Multi-stage vibration decoupling
- » Double-deck housing
- » The interior of unit use the well-known sound-insulated materials
- » Made by German craftsman spirit, superb assembly process and strict quality process control

> Intelligence

- » Smart multi-function control (smic) system
- » Controller and inverter supplied by Carel, control logic is developed by SmartHeat
- » Could be connected to the Internet of Things, parameters are easy to read, after-sales can be solved remotely
- » Complete automatic protection functions. Most of which can be reset automatically(protecting the equipment while reducing maintenance)

产品名称 Description 产品编号 Order Number	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation Point			性能参数 Performance Data 1)						尺寸 HxWxD Dimensions HxWxD 2)	约重量 Approx. Weight
						制热/ 制冷量 Heating/ Cooling Capacity	用户侧 水流量 Water Flow for User	机外余压 External Pressure	输入功率 Power Input	运行电流 Current	制热/制冷 能效比 COP/EER		
						[kW]	[m³/h]	[KPa]	[kW]	[A]	-		
SmartHeat aero 004i *	变频双转子式 Inverter-rotary	1	制热 Heating	A7 / W45	地暖/风盘	4.00	0.69	44.00	1.23	6.99	3.25	690x846x370	62
			制冷 Cooling	A35/ W7	重力柜/风盘	3.60	0.62	45.00	1.03	6.42	3.19		
SmartHeat aero 008i *	变频双转子式 Inverter-rotary	1	制热 Heating	A7 / W45	地暖/风盘	7.00	1.21	97.00	2.12	10.20	3.30	950x864x344	86.8
			制冷 Cooling	A35/ W7	重力柜/风盘	6.80	1.17	100.00	2.26	10.40	3.01		
SmartHeat aero 010i *	变频双转子式 Inverter-rotary	1	制热 Heating	A7 / W45	地暖/风盘	11.03	1.90	98.50	3.41	16.10	3.23	954x967x344	155
			制冷 Cooling	A35/ W7	重力柜/风盘	9.53	1.64	102.00	3.10	14.90	3.07		
SmartHeat aero 014i *	变频双转子式 Inverter-rotary	1	制热 Heating	A7 / W45	地暖/风盘	13.80	2.38	143.00	4.10	19.60	3.37	1382x1241x401	185
			制冷 Cooling	A35/ W7	重力柜/风盘	13.40	2.31	145.20	4.20	20.10	3.19		

*国内定制

产品名称 Description 产品编号 Order number	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation point			性能参数 Performance data 1)							尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight
						末端形式/ 压缩机转速 Revolutions per second	制热/ 制冷量 heating/ cooling capacity	用户侧 水流量 Water flow for user	用户侧 水压降 Pressure drop of user	输入 功率 Power input	运行 电流 Current	制热/制冷 能效比 COP/EER		
							[kW]	[m3/h]	[kpa]	[kW]	[A]	[-]		
SmartHeat aero 028i/2 *特别为户式毛细辐射 空调系统定制 *special design for capillary air conditioning system	双压缩机 two compressor 变频转子式 Inverter-rotary	2	制热 Heating	供给毛细与新风机 For capillary ceiling and fresh air unit	A7 / W35 + 制冷剂	毛细管侧 Capillary	11.02	3.16	16.80	2.68	15.23	4.11	1455 x1105 x530	160
					新风机侧 Fresh air	11.42	/	/	2.87	16.31	3.98			
			制冷 Cooling	供给毛细与新风机 For capillary ceiling	A35 / W16 + 制冷剂	毛细管侧 Capillary	13.20	3.79	22.60	2.65	15.06	4.98		
					新风机侧 Fresh air	10.45	/	/	2.66	15.11	3.93			
SmartHeat aero 056i/2 *特别为户式毛细辐射 空调系统定制 *special design for capillary air conditioning system	双压缩机 two compressor 变频转子式 Inverter-rotary	2	制热 Heating	供给毛细与新风机 For capillary ceiling	A7 / W35 + 制冷剂	毛细管侧 Capillary	18.29	5.25	19.54	4.36	24.77	4.19	2115x1260x775	487
					新风机侧 Fresh air	21.57	/	/	4.43	25.17	4.87			
			制冷 Cooling	供给毛细与新风机 For capillary ceiling	A35 / W16 + 制冷剂	毛细管侧 Capillary	28.33	8.13	25.34	4.76	27.05	5.95		
					新风机侧 Fresh air	20.61	/	/	4.73	26.88	4.36			
SmartHeat aero 032 i	变频涡旋式 Inverter-scroll	1	制热 Heating	地暖供暖 Floor Heating	A7 / W35	min (30rps)	10.03	4.83	26.80	2.86	8.69	3.51	1270 x 1160 x 665	230
						max (130rps)	28.06	/	/	6.21	15.28	4.52		
			制冷 Cooling	风机盘管 Fan coil unit	A35 / W7	min (30rps)	9.65	4.66	26.50	2.45	8.72	3.94		
						max (130rps)	27.03	/	/	6.5	17.44	4.16		

德国原装进口

产品名称 Description	最大电 流输入 Max.Current Consumption	电源输入 Power Supply	最高出 水温度 Max.Flow Temperature	用户侧 接管管径 Pipe Diameter for user	地源侧 接管管径 Pipe Diameter for Source	水力接 口尺寸 Hydraulic Connections	能效标签 Energy Label		制冷剂 Refrigerant	制冷剂 重量 Refrigerant Weight	润滑油 型号 Model of Lubricating Oil	润滑油 重量 Weight of Lubricating Oil	噪音 水平 Sound Pressure Level	建议电源 线径 Suggest Wire Diameter	建议 空开 Suggest Air Switch
							配合一 般末端 Space Heats 3)	配合智能 温控末端 Smart Package 3)							
	[A]	[V,Ph,HZ]	[°C]	—	—	—			—	[Kg]	—	[L]	[dB(A)]	[mm ²]	[A]
SmartHeat aero 004i *	12	230;1;50	55	3/4"	/	3/4"	A++	A+++	R410a	1.76	RB68A	0.32	38	2.5	16
SmartHeat aero 008i *	12	230;1;50	55	3/4"	/	3/4"	A++	A+++	R410a	1.76	FV68S	0.65	38	2.5	16
SmartHeat aero 010i *	16	230;1;50	55	3/4"	/	3/4"	A++	A+++	R410a	2.5	FV50S	1.07	44	4	20
SmartHeat aero 014i *	31	230;1;50	55	1"	/	1"	A++	A+++	R410a	3.7	FV50S	1.7	40	6	32
SmartHeat aero 028i/2	2x16	400;3;50	55	1"	/	1"	A++	A+++	R410a	1.76+3.3	FV50S	2.3	49	6	40
SmartHeat aero 056i/2	2x30	400;3;50	60	1 1/4"	/	1 1/4"	A++	A+++	R407C	3.4+6.4	FV50S	4.1	56	6x2	40x2
SmartHeat aero 032i	30	400;3;50	60	1 1/4"	/	1 1/4"	A++	A+++	R407C	4	FV50S	1.9	43-49	6	40

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SERIE aero plus

SmartHeat aero plus是一个非常特殊的设备,当需要增大运行范围提高制热出水温度时,这系列设备会体现出更大的优势。设备使用了蒸汽喷射技术 (EVI) 扩大工作范围。蒸汽喷射技术 (喷气增焓) 可对制冷剂进行冷却并将其压缩至更高温度。当室外温度低,同时要求高出水温度时,确保了系统运行的高COP值。

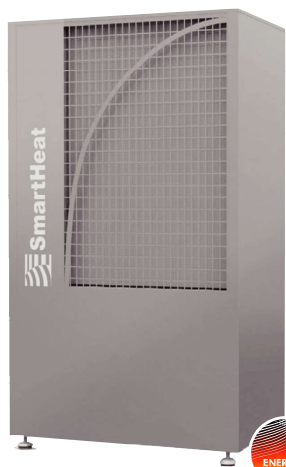
类型: 空气/水

功率范围: 37-138kW (制冷)

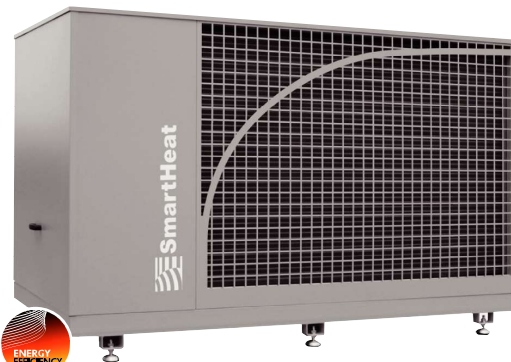
COP : A7/W35高达 5.13

优势一览:

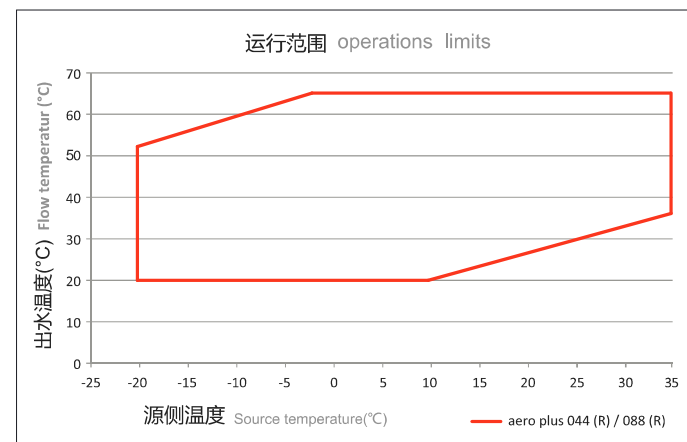
- »» 能效等级达到欧洲A+++级别 (最高)
- »» 翅片特殊涂层处理, 间距大, 可机械防霜
- »» 施乐百变频高效EC风机, 节能又静音
- »» 喷气增焓压缩机, 最高出水温度可达65°C
- »» 独有的智能除霜逻辑, 保证最小化霜时间
- »» 可实现 2 档(Aero plus176 为 4 档)输出
- »» 智能控制 (Smic) 系统, 可编程
- »» -20°C依然能保证50°C出水



aero plus 044



aero plus 088



* 制热工况

Series aero plus

The SmartHeat aero plus is a very special unit, offering exceptional advantages when it comes to operating range and heating flow temperature. Using EVI (Enhanced Vapour Injection) technology, the operating range of this model has been expanded significantly. Enhanced vapour injection cools the refrigerant, which can then be compressed to a much higher degree than would be otherwise possible. This ensures excellent COPs even with low outdoor temperatures and high heating flow temperatures

Types: Air/water

Capacity range: 37- 138 kW (Cooling)

COP : A7/W35 up to 5.13

Advantages at a glance:

- » Efficiency level reaches A+++ in Europe(Highest)
- » Special coating treatment of fins, anti-frost function
- » High efficiency EC fan support by Ziehl-Abegg, silence and high low energy consumption
- » EVI compressor, heating flow temperature up to 65 °C
- » Intelligent defrosting logic, ensure the min frost time
- » Up to 2 performance levels (4 performance levels for Aero plus 176)
- » Smart multi-function control (smic) system, control logic is developed by SmartHeat
- » Ensure 50 °C flow temp at -20 °C



aero plus 176



aero plus

产品名称 Description 产品编号 Order number	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation point		性能参数							尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight
					功率等级 Capacity levels	制热/ 制冷量 heating/cooling capacity	用户侧 水流量Water flow for user	用户侧 水压降 Pressure drop of user	输入功率 Power input	运行 电流 Current	制热/制冷 能效比 COP/EER		
			--	--	--	[kW]	[m3/h]	[Kpa]	[kW]	[A]	[-]	[mm]	[kg]
SmartHeat aero plus 044 H955047044	涡旋式 Scroll	1	制热 Heating	A7 / W35	100%	34.32	5.91	18.00	7.87	13.00	4.42	2115x1250x775	460
			制冷 Cooling	A35 / W7		36.73	6.33	27.80	9.12	14.90	4.03		
SmartHeat aero plus 088 H955047088	涡旋式 Scroll	2	制热 Heating	A7 / W35	50% / 100%	68.64	11.82	18.86	15.24	26.00	4.53	1510x2315x1320	790
			制冷 Cooling	A35 / W7		73.74	12.70	22.73	17.81	29.80	4.13		
SmartHeat aero plus 176 H955047159	涡旋式 Scroll	4	制热 Heating	A7 / W35	25% / 50% / 75% / 100%	146.15	25.17	36.32	28.49	52.4	5.13	2265x2130x2260	2300
			制冷 Cooling	A35 / W7		137.82	23.74	32.87	30.16	53.78	4.57		

产品名称 Description 产品编号 Order number	最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	能效标签		制冷剂 Refrigerant	制冷剂重量 Refrigerant weight	润滑油型号 Model of lubricating oil	润滑油重量 weight of lubricating oil	噪音水平 Sound power level	建议电源线径 Suggest Wire Diameter	建议空开 Suggest Air Switch
					配合一般末端 Space heaters 3)	配合智能温控 末端 Smart Package 4)							
	[A]	[V]; [Ph]; [Hz]	[°C]	--			--	[kg]	--	[L]	[dB]	[mm]	[A]
SmartHeat aero plus 044 H955047044	26.7	400 ; 3 ; 50	65	1 1/2"	A++	A+++	R407c	14	FV68S	2.6	54	10	63
SmartHeat aero plus 088 H955047088	54.3	400 ; 3 ; 50	65	2"	A++	A+++	R407c	18	FV68S	5.2	56	16	80
SmartHeat aero plus 176 H955047159	106.8	400 ; 3 ; 50	65	2 1/2"	A++	A+++	R407c	34	FV68S	98	56	25	160

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SmartHeart aero plus 088 Split Simply universal Air/water heat pump

SmartHeart aero plus 088 Split 是思帕研发的一款分体式低温空气源热泵。设备使用了蒸汽喷射技术 (EVI) 扩大工作范围。蒸汽喷射技术 (喷气增焓) 可对制冷剂进行冷却并将其压缩至更高温度。当室外温度,同时要求高出水温度时,EVI 技术确保了系统运行的高 COP 值 (如在 -20°C 下出水温度要求 50°C)。分体式安装更加灵活,维护更加方便。

SmartHeart aero plus 088 Split is a split cryogenic air source heat pump developed by SmartHeat. A technology called Enhanced Vapor Injection (EVI) is applied to expand operating range. The refrigerant can be cooled through EVI (enthalpy is increased in this way), so that its temperature can be increased much higher by compression. High COP can be ensured even when it comes to low outdoor air temperature but high outflow temperature is required. (eg. To = -20°C while Tw = 50°C). The split installation also makes this heat pump flexible to install and easy to operate and maintain.

Advantages at a glance:

> Special design

- » One heat pump separated to two units, the compressor placed in the indoor unit, to prevent the excessive noise from the outdoor unit.
- » There's no water pipe outside, no risk of frosting
- » The size of indoor unit is not big, could install in the engine room, low sound pressure level
- » The outdoor unit is very impact, and flexible
- » Up to 2 performance levels in high COP

> Good performance

- » Efficiency level reaches A+++ in Europe(Highest)
- » Special coating treatment of fins, with anti-frost function
- » High efficiency EC fan support by Ziehl-Abegg, silence and high low energy consumption
- » EVI compressor, heating flow temperature up to 65°C
- » Intelligent defrosting logic, ensure the minimum frost time

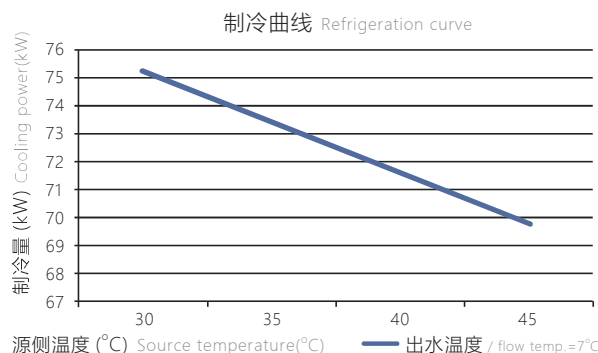
优势一览:

> 设计独特

- »» 外机不含压缩机, 噪音大幅降低
- »» 室外没有水管, 没有受冻风险
- »» 内机小, 布置在机房内, 不受噪音影响
- »» 外机小巧, 布置更加灵活
- »» 可实现高能效比的 2 档输出

> 性能出众

- »» 能效等级达到欧洲A+++级别 (最高)
- »» 翅片特殊涂层处理, 间距大, 可机械防霜
- »» 施乐百变变频高效EC风机, 节能又静音
- »» 喷气增焓压缩机, 最高出水温度可达 65°C
- »» 独有的智能除霜逻辑, 保证最小化霜时间



产品名称 Description 产品编号 Order number	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation point		性能参数 Performance data 1)							尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight
					功率等级 Capacity levels	制热/制冷量 heating/cooling capacity	用户侧 水流量 Water flow for user	用户侧 水压降 Pressure drop of user	输入功率 Power input	运行 电流 Current	制热/制冷 能效比 COP/EER		
			--	--	--	[kW]	[m3/h]	[Kpa]	[kW]	[A]	[-]	[mm]	[kg]
SmartHeat aero plus 088 split	涡旋式 Scroll	2	制热 Heating	A7 / W35	50% / 100%	68.64	11.83	18.86	15.24	26.0	4.50	1500x1870x765 (室外机)	322 (室外机)
			制冷 Cooling	A35 / W7		73.47	12.70	22.73	17.81	29.8	4.13	1535x1195x720 (室内机)	513 (室内机)

产品名称 Description 产品编号 Order number	最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	能效标签 energy label		制冷剂 Refrigerant	制冷剂重量 Refrigerant weight	润滑油型号 Model of lubricating oil	润滑油重量 weight of lubricating oil	噪音水平 Sound Pressure Level	建议电源线径 Suggest Wire Diameter	建议空开 Suggest Air Switch
					配合一般末端 Space heaters 3)	配合智能温控 末端 Smart Package 4)							
	[A]	[V]; [Ph]; [Hz]	[°C]	--			--	[kg]	--	[L]	[dB(A)]	[mm]	[A]
SmartHeat aero plus 088 Split H955047088	53.4	400 ; 3 ; 50	65	2"	A++	A+++	R407c	17+	FV68S	5.2+	室外机 53 室内机 41	16	80

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SERIE Aero

aero 168 是思帕为适应高端项目要求而进口的空气源热泵。

它的单体制冷量高达 164kw, 可以服务于超过 1500 平的大型别墅, 而它却依然使用空气源进行换热。

这可以为寸土寸金的大型别墅节约可观的使用空间。

对于商用项目也同样适用。

类型: 空气 / 水

功率范围: 164kW

优势一览:

> 性能出众

- » 单体制冷量高达 164kw 的风冷热泵
- » 能效等级达到欧洲 A+++ 级别 (最高)
- » 高精度水温控制, 精度高达 $\pm 0.1^{\circ}\text{C}$
- » 大翅片间距, 翅片特殊涂层处理, 具备机械防霜功能
- » 独有的智能除霜逻辑, 保证最小化霜时间
- » 四档静音压缩机, 施乐百全变频风扇
- » 最高出水温度可达 55°C



Aero168

> 静音设计

- » 多重减震措施, 减少共振
- » 双层外壳, 隔绝噪音
- » 机组内部采用世界顶级消音材料
- » 德国工匠精神精工打造

> 智能节能

- » 多功能智能控制 (Smic) 系统
- » 卡乐控制器, 运行逻辑自主研发
- » 可接入物联网, 全机上百个参数一目了然, 足不出户解决售后问题。
- » 齐全的自动保护功能, 大部分能自动复位 (保护主机同时又能减少维护)

SmartHeat aero 168 air/water heat pump is special design for China. Max cooling capacity up to 164kW with a single unit, could cover Villa over 1500 m^2 . It could save space for large domestic villas, and also applicable for commercial projects.

Type: Air/water

Capacity range: 164kW

Advantages at a glance:

Good Performance

- » Max cooling capacity up to 164kW with a single unit
- » Efficiency level reaches A+++ in Europe(Highest)
- » Flow water temperature control accurately, the accuracy of temperature control is $\pm 0.1^{\circ}\text{C}$
- » Special coating treatment of fins, with anti-frost function
- » Intelligent defrosting logic, ensure the minimum frost time
- » 4 steps compressor and frequency conversion fan
- » Max. heating flow temperature up to 55°C

Silence

- » Multi-stage vibration decoupling
- » Double-deck housing
- » The interior of unit use the well-known sound-insulated materials
- » Made by German craftsman spirit, superb assembly process and strict quality process control

Intelligence

- » Smart multi-function control (smic) system
- » Controller and inverter supplied by Carel, control logic is developed by SmartHeat
- » Could be connected to the Internet of Things, parameters are easy to read, after-sales can be solved remotely
- » Complete automatic protection functions. Most of which can be reset automatically(protecting the equipment while reducing maintenance)

产品名称 Description	制冷剂 Refrigerant	压缩机类型 Compressor	工况 Operation point		性能参数 Performance data 1)				最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		制冷剂重量 Refrigerant weight	噪音水平 Sound Pressure Level
					功率等级 Capacity levels	制热/ 制冷量 heating/ cooling capacity	输入 功率 Power input	制热/ 制冷能 效比 COP/ EER							配合一 般末端 Space heaters 3)	配合智能 温控末端 Smart Package 4)		
产品编号 Order number					[kW]	[kW]	[-]	[A]	[V]; [Ph]; [Hz]	[$^{\circ}\text{C}$]		[mm]	[Kg]			[Kg]	[dB(A)]	
SmartHeat aero 168	R407c	涡旋式 Scroll	制热 Heating	A7 / W35	25% / 50% / 75% / 100%	151.08	32.56	4.64	120.8	400 ; 3 ; 50	55	2 1/2"	2265x2130x2260	2300	A++	A+++	34	56
H955047168			制冷 Cooling	A35 / W7		163.97	34.02	4.82										



SmartHeat Titan

大型热泵和能源中心

Large scale heat pumps
and energy centres



生产过程
Production in progress



客户定制 **Titan Z**
能源中心，功率高达 2,500 kW
Customised Titan Z
energy centres up to 2,500 kW



Titan
2级或多级压缩，功率高达 380 kW
2-stage or multi-stage up to 380 kW



SERIE Tian

Smarterheat Titan系列产品主要包括可以满足高输出负荷需求的大型热泵。它们可以与不同的热源系统连接。根据其性能参数范围，Titan系列机组由串联高效涡旋式压缩机或无级变速螺杆式压缩机装配成，可以根据输出负荷任意调节。

由于多种可选择设备和多功能智能控制（Smic）系统，Titan系列热泵可以满足任何工程项目要求。

类型：水/水

功率范围：Titan55—373Kw ,Titan Z定制系列可达2500KW

COP：水/水>6

优势一览：

- »» 串联高效涡旋式压缩机、半封闭式螺杆式压缩机或半封闭式活塞式压缩机（根据具体性能范围确定）
- »» 压缩机可连续调节输出量，使热泵在部分负载下高效运行
- »» 冷却回路配有干燥过滤器，可选视镜和高/低压力监测系统
- »» 优化COP值的电子膨胀阀，降低运行成本
- »» 电子软启动器以降低启动电流
- »» 大型铜焊接不锈钢板式换热器
- »» R407C制冷剂，最高出水温度可达55°C
- »» 机组外壳由喷涂钢板制成（可达373kW）
- »» 多功能智能控制(Smic)系统
- »» 水管连接口在设备后侧
- »» 多功能减震

Series Titan

The SmartHeat Titan series consists of large heat pumps for high output demands. They can be used in connection with many different heat source systems. Depending on the performance range, our heat pumps are equipped with efficient scroll compressors (tandem assemblies), screw compressors that allow for continuous output control and piston engines.

Thanks to the various equipment options, which added value such as cooling or even a bivalent operation enable and the smart multi-function control (smic) system, the units of the SmartHeat Titan series can be individually adjusted to meet any project requirements.

Types : water/water

Capacity range: Titan 55 – 373 kW,
Titan Z – custom-engineered, up to 2500 kW
COP : WW > 6



> Standard features:

- » Hermetically sealed, high-efficiency scroll compressors in tandem design, semi-hermetically sealed screw compressors or semi-hermetically sealed piston compressors (depending on performance range)
- » Energy-efficient partial load mode operation thanks to multiple, output-adjusted compressors
- » Cooling circuit with filter dryer, optional sight glass and electronic high/low pressure monitoring system
- » Electronic expansion valve for optimised COP and low operating costs
- » Electronic soft starter reducing rush-in current
- » Large copper-soldered stainless steel plate heat exchangers
- » R407C refrigerant, max. heating flow temperature 55 °C

- » Sound-insulated housing made in powder-coated sheet steel (up to 373 kW)
- » Multi-function control (smic) system
- » All electrical components installed and fully wired
- » Hydraulic connections at the rear of the unit, adaptable
- » Multi-stage vibration decoupling



Serie Tian

产品名称 Description 产品编号 Order number	制冷剂 Refrigerant	压缩机类型 Compressor	工况 Operation point		性能参数 Performance data 1)					最大电 流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		建议电源 线径 Suggest Wire Diameter	建议 空开 Suggest Air Switch	
					功率等级 Capacity levels	制热/ 制冷量 heating/ cooling capacity	输入 功率 Power input	运行 电流 Current	制热/ 制冷能 效比 COP/ EER							配合一 般末端 Space heaters 3)	配合智能 温控末端 Smart Package 4)			
					[kW]	[kW]	[A]	[-]	[A]	[V]; [Ph]; [Hz]	[°C]	[mm]	[Kg]			[mm ²]	[A]			
SmartHeat Titan 076 H955019054 / H955017075	R407c	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	71.10	14.80	27.00	4.80	50	400 ; 3 ; 50	55	2"	外壳尺寸 dimensions of housing 1700 x 1005 x 920 带接口 with connections 1700 x 1005 x 960	680	A++	A+++	16	80
				毛细辐射供暖 Capillary ceiling	W10 / W35		74.89	11.81	23.00	6.34										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		68.00	10.41	21.20	6.53										
				毛细冷吊顶 Capillary ceiling	W25 / W16		84.51	10.32	21.20	8.19										
SmartHeat Titan 163 H955019114 / H955017162	R407c	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	146.79	31.33	54.42	4.69	100	400 ; 3 ; 50	55	2"	外壳尺寸 dimensions of housing 1700 x 1005 x 920 带接口 with connections 1700 x 1005 x 960	750	A++	A+++	25	125
				毛细辐射供暖 Capillary ceiling	W10 / W35		155.05	25.59	47.70	6.06										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		139.99	22.70	44.72	6.17										
				毛细冷吊顶 Capillary ceiling	W25 / W16		174.68	22.93	45.42	7.62										

1) 根据DIN EN 14511 according to DIN EN 14511

2) 请给接口留出足够的安装空间 please consider enough space for the connections

3) 配合一般末端的能效等级 energy efficiency space heaters

4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定，使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

Serie Tian

产品名称 Description 产品编号 Order number	制冷剂 Refrigerant	压缩机类型 Compressor	工况 Operation point		性能参数 Performance data 1)					最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		建议电源线径 Suggest Wire Diameter	建议空开 Suggest Air Switch	
					功率等级 Capacity levels	制热/制冷量 heating/cooling capacity	输入功率 Power input	运行电流 Current	制热/制冷能效比 COP/EER							配合一般末端 Space heaters 3)	配合智能温控末端 Smart Package 4)			
					[kW]	[kW]	[A]	[-]	[A]	[V]; [Ph]; [Hz]	[°C]		[mm]	[Kg]			[mm²]	[A]		
SmartHeat Titan 238 H955019172 / H955017237	R407c	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	221.29	46.78	78.28	4.73	158	400 ; 3 ; 50	55	DIN 100	外壳尺寸 dimensions of housing 1840 x 1258 x 1270 带接口 with connections 1840 x 1258 x 1320	970	A++	A+++	50	200
				毛细辐射供暖 Capillary ceiling	W10 / W35		232.70	38.40	68.14	6.06										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		209.33	34.30	63.60	6.10										
				毛细冷吊顶 Capillary ceiling	W25 / W16		259.18	35.29	65.16	7.34										
SmartHeat Titan 307 H955019219 / H955017306	R407c	螺杆式 Screw	制热 Heating	地暖供暖 Floor Heating	W10 / W45	25% / 50% / 75% / 100%	291.43	64.24	103.90	4.54	162	400 ; 3 ; 50	55	地源 for BW DIN 100 水源 for VVW DIN 125	外壳尺寸 dimensions of housing 2200 x 1205 x 1445 带接口 with connections 2200 x 1205 x 1500	1250	A++	A+++	70	200
				毛细辐射供暖 Capillary ceiling	W10 / W35		317.90	53.63	88.40	5.93										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		292.94	47.67	80.00	6.14										
				毛细冷吊顶 Capillary ceiling	W25 / W16		348.23	54.54	89.80	6.38										
SmartHeat Titan 378 H955019273 / H955017377	R407c	螺杆式 Screw	制热 Heating	地暖供暖 Floor Heating	W10 / W45	25% / 50% / 75% / 100%	364.63	80.40	132.90	4.54	185	400 ; 3 ; 50	55	地源 for BW DIN 100 水源 for VVW DIN 125	外壳尺寸 dimensions of housing 2200 x 1205 x 1445 带接口 with connections 2200 x 1205 x 1500	1400	A++	A+++	70	200
				毛细辐射供暖 Capillary ceiling	W10 / W35		391.26	66.16	112.10	5.91										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		358.90	58.68	101.50	6.12										
				毛细冷吊顶 Capillary ceiling	W25 / W16		424.86	67.67	114.30	6.28										

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4) 配合智能温控末端的系统能效等级 energy efficiency package of space heater and temperature control

5) 德国原装进口 import from German

>>能效等级根据欧洲标准No. 811/2013 测定, 使用标准气候状况和额定设计温度 (W35或W55) 进行计算

>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

Serie Tian HT

产品名称 Description 产品编号 Order number	制冷剂 Refrigerant	压缩机类型 Compressor	工况 Operation point		性能参数 Performance data 1)					最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力 接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		建议电源 线径 Suggest Wire Diameter	建议 空开 Suggest Air Switch	
					功率等级 Capacity levels	制热/ 制冷量 heating/ cooling capacity	输入 功率 Power input	运行 电流 Current	制热/ 制冷能 效比 COP/ EER							配合一 般末端 Space heaters 3)	配合智能 温控末端 Smart Package 4)			
					[kW]	[kW]	[A]	[-]	[A]	[V]; [Ph]; [Hz]	[°C]	[mm]	[Kg]			[mm ²]	[A]			
SmartHeat Titan 053HT H955020037 / H955018052	R134a	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	50.10	10.38	20.86	4.83	50	400 ; 3 ; 50	60	2"	外壳尺寸 dimensions of housing 1700 x 1005 x 920 带接口 with connections 1700 x 1005 x 960	590	A++	A+++	16	63
				毛细辐射供暖 Capillary ceiling	W10 / W35		52.34	8.31	18.64	6.30										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		47.32	7.28	17.66	6.50										
				毛细冷吊顶 Capillary ceiling	W25 / W16		58.78	7.16	17.46	8.21										
SmartHeat Titan 107HT H955020075 / H955018106	R134a	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	99.27	21.78	42.84	4.56	100	400 ; 3 ; 50	65	2"	外壳尺寸 dimensions of housing 1700 x 1005 x 920 带接口 with connections 1700 x 1005 x 960	750	A++	A+++	25	125
				毛细辐射供暖 Capillary ceiling	W10 / W35		104.79	18.02	39.08	5.82										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		94.30	16.05	37.24	5.87										
				毛细冷吊顶 Capillary ceiling	W25 / W16		120.22	16.16	37.30	7.44										
SmartHeat Titan 164HT H955020117 / H955018163	R134a	涡旋式 Scroll	制热 Heating	地暖供暖 Floor Heating	W10 / W45	50% / 100%	153.47	32.46	58.84	4.73	158	400 ; 3 ; 50	65	2"	外壳尺寸 dimensions of housing 1700 x 1005 x 920 带接口 with connections 1700 x 1005 x 960	970	A++	A+++	50	200
				毛细辐射供暖 Capillary ceiling	W10 / W35		161.56	27.09	52.62	5.96										
			制冷 Cooling	风机盘管 Fan coil unit	W25 / W7		145.05	24.40	49.78	5.94										
				毛细冷吊顶 Capillary ceiling	W25 / W16		181.64	25.03	50.04	7.26										

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>> energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

SmartHeart Therm Select Simply universal Air/water heat pump Water/water heat pump



SmartHeart ThermSelect是我们的新专利产品。它是一款结合了地源和空气源系统的热泵,系统会自动监控热源实时温度来选择适合的热源。它的运行费用极低,对环境友好,节约了很多的初投资和安装费用。对比空气源热泵,它有着更低的运行噪音,维护也更方便。能效等级为A+++，根据欧盟法规Nr.811/2013，评定条件依据平均的气候情况和温度应用(35°C或55°C出水)。

双系统结合，高集成度

创新性的西门子控制系统保证了全年度能源的经济性使用，保障了所有部件都能完美协作。此款产品具有很高的峰值COP，很高的全年综合能效，以及类比同类产品显著降低的运行费用。供热费用同比可以节约约60%。机组噪音也由智能程序控制，在要求安静的时间段会把噪音控制在最低水平。

优势特点一览：

思帕 Therm Select 热泵的制热功率为40kW,可随要求切换制冷/制热模式，可在大部分新建建筑和改建建筑中应用，应用领域包括别墅、住宅、商业和工业建筑等。

- »» 制热时双热源耦合运行
- »» 减少热源接入初投资(地源井的数量和尺寸只需普通地源热泵的一半)
- »» 与单热源热泵相比有着更高的COP和年综合能效
- »» 通过选择热源实现更低的运行噪音
- »» 最高的运行效率
- »» 产品高度集成，节约室外安装空间
- »» 不占室内空间

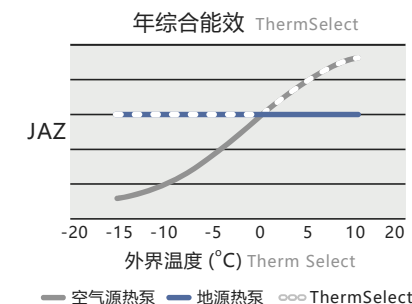
SmartHeart ThermSelect is our new patented product. It is a heat pump that combines ground source and air source. The system can monitor the real-time temperature of the heat source automatically to select the appropriate heat source. It is eco-friendly, and the cost of operation is low. Initial investment and installation costs can be saved significantly. Compared to air source heat pump, it has lower operating noise and easier to maintain. The energy efficiency rating is A+++，and according to EU directive Nr.811/2013, the assessment conditions are based on the average climatic condition and temperature application (35°C or 55 °C outflow).

Combination of Two Systems with High Integration

The innovative Siemens control system guarantees the economical application of energy throughout whole year, ensures that all components work perfectly. This product has a high peak COP, high overall energy efficiency throughout the year, and significant reduced operating costs compared to similar products. Heating costs can be saved by about 60%. Unit noise is also controlled by intelligent procedures that keep noise to a minimum level when quiet is needed.

Overview of Advantages

- The SmartHeart ThermSelect heat pump has a heating capacity of 40 kW and can switch to cooling/heating mode as required. It can be used in most recently established and renovated buildings, including mansions, residences, commercial and industrial buildings.
- »» Dual heat source coupled operation during heating
 - »» Reduce initial investment in heat source access (the number and the size of ground source wells is only half of ordinary ground source heat pumps)
 - »» Higher COP and annual energy efficiency compared to single heat source heat pumps
 - »» Lower operating noise through heat source selection
 - »» Maximum operating efficiency
 - »» High integration, saving outdoor installation space
 - »» No indoor space is occupied



产品名称 Description	制冷剂 Refrigerant	压缩机类型 Compressor	热源	工况 Operation point	性能参数 Performance data 1)			最大电流输入 max. current consumption	电源输入 Power supply	最高出水温度 Max. flow temperature	水力接口尺寸 Hydraulic connections	尺寸 H x W x D Dimensions H x W x D 2)	约重量 approx. weight	能效标签 energy label		制冷剂重量 Refrigerant weight	噪音水平 Sound Pressure Level		
					功率等级 Capacity levels	制热/ 制冷量 heating/ cooling capacity	输入 功率 Power input							制热/ 制冷能 效比 COP/ EER	配合一般末端 Space heaters 3)			配合智能温控末端 Smart Package 4)	
						[kW]	[kW]	[-]	[A]	[V]; [Ph]; [Hz]	[°C]	[mm]	[Kg]			[Kg]	[dB(A)]		
SmartHeart Therm Select	R407c	涡旋式 Scroll	全地源	制热 Heating	A7/W35	100%	37.77	8.44	4.47	30.2	400 ; 3 ; 50	65	1.1/2"	2100x1250x775	490	A++	A+++	14	44
				制冷 Cooling	A35 / W7		39.72	9.70											
			全空气源	制热 Heating	B05/W35	100%	35.45	8.25	4.29										
				制冷 Cooling	W35 / W7		41.68	8.34	5.00										



SmartHeat 智能控制系统

smic-system



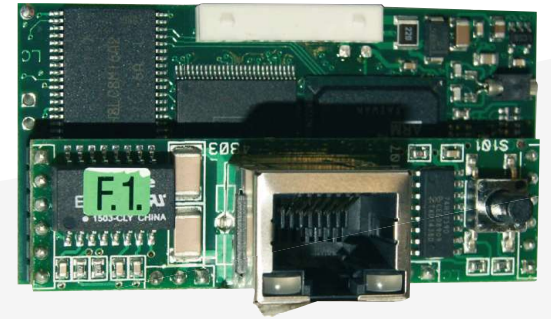
用户远程操控界面
Well-designed user interface
for remote access



操作面板 / Display



APP 应用 / APP



网卡 / web card

Smic 系统

现代热泵必须满足越来越复杂的制热和建筑管理的要求。

首先，它必须适用于建筑物的制热和（或）制冷负荷。现如今热泵系统已经在制热（冷）系统中占有一席之地，所以热泵机组必须配备一个系统与现代化控制系统兼容，这将是未来的趋势。不仅为了之后与智能电网的整合，也为了智能计量等。这一切都会因SmartHeat Smic系统而实现。

Smic系统保证热泵在其最佳状态下工作。

> 标准功能（节选）

- » 基于微处理技术的电子控制器
- » 根据天气条件的变化（室外温度），可以自动连续地控制热泵，通过制冷制热工况下调节系统温度来实现自动控制
- » 实现制热、制冷和生活热水制备的独立调节，为用户提供最佳的舒适感
- » 制冷制热性能曲线配合项目需求
- » 每日每周定时调节温度
- » 热水制备中集成了消除军团杆菌功能模块
- » 防冻保护措施
- » 为空气/水热泵配置除霜控制
- » 用一个或多个电子膨胀阀和压力温度监测器自动对冷却回路进行过热保护
- » 在源侧制冷剂和制冷回路设置安全检测部件
- » 多个外设通信接口，包括可调节压缩机的控制装置
- » 多个热泵连接时接口预留（串联控制）
- » 对设备附带的额外第二热源进行控制
- » 对所有重要且与安全相关的设备配置进行密码保护

- » 对特定压缩机的运行进行监测
- » 可根据需要预设记录的变量
- » 精美设计的用户界面(可提供不同尺寸)
- » 所有电缆均插入式连接
- » 功率与电气开关和热泵的类型匹配
- » 所有参数均有故障安全储存
- » 内置电池作为后备电源
- » 智能电网接口
- » 利用智能钥匙系统进行软件更新和数据备份

> 附加功能

- » 多种模拟量和数字量输入/输出
- » 广泛兼容的传感器和发生器
- » 评估单端和浮动信号
- » 数字SEPR计算器

> 附件

通信模块 I：
用总线板完成热泵与设备管理系统的
数据交换；
Mod协议监控记录，可选择lonBus或
BACnet协议接口；

通信模块 II：
用于实时监控的网卡配合用户操作界面，
可以和互联网进行数据通信；密码保护
防止未经授权的访问。

smic-system

Modern heat pumps must meet ever more complex requirements with regard to heating and building management. First of all, they must of course be suitable for the heating and/or cooling load of the building. The control system must be future-proof, catering for possible later smart grid integration, smart metering, power from photovoltaic systems, etc. All this and much more is now available with the smic system from SmartHeat. smic ensures that the heat pump always operates at its optimum.

> Standard functions (excerpt)

- » Electronic regulator with micro-processor
- » Automatic continuous control of the heat pump based on weather conditions (outdoor temperature) by means of system temperature adjustment during heating and cooling operation
- » Heating, cooling and DHW preparation individually adjustable for optimum user comfort
- » Heating and cooling curves configurable to match building characteristics
- » Daily and weekly timer programming with adjustable temperature reduction
- » Anti-legionella function for DHW
- » Frost protection at inlet and outlet
- » Controlled passive and/or active cooling (optional)
- » Configurable defrost control for air/water heat pumps
- » Automatic superheating control in cooling circuits by means of pressure and temperature sensors and one or more electronic expansion valves
- » Monitoring of various safety limits in source, refrigerant and cooling circuit
- » Communication interfaces for various peripherals, including control devices for adjustable compressors
- » Interfaces for the linking of multiple heat pumps (cascade control)

- » Automatic activation of additional heat sources for bivalent operation
- » Password protection for all critical and safety-relevant unit configurations
- » Monitoring of operating limits for certain compressor types
- » Comprehensive range of predefined variables for data analysis
- » Intuitive graphic user interface (available in various sizes)
- » Plug-type connectors for all cables
- » Power and switching electronics adapted to suit heat pump model
- » Fail-safe storage of all parameter values
- » Integrated battery for timer
- » Smart grid communication interface
- » Smartkey software updates and data backups

> Additional functional features*

- » Various analogue and digital inputs / outputs
- » Broad range of compatible sensors and actors
- » Evaluation of single-ended and floating signals
- » Digital SEPR calculator

> Accessories*

Communication module I:
Bus card for data exchange between heat pump and building management system, with ModBus monitoring log; optional LonBus or Bacnet interface

Communication module II:
Web card for real-time monitoring with intuitive user interface and data communication through the internet; optional data logging for selected parameters; password-protected to prevent unauthorised access

* nicht alle Ausstattungsvarianten sind kombinierbar
Please note that not all above options can be combined



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Keine Haftung für Irrtum und Druckfehler.
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Our contribution to the protection of the environment,
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Smarteheat 热泵荣誉一览

- 1998年：制造首台污水热泵
- 2001年：在德国太阳能学会中获太阳能奖
- 2002年：荣获设计大奖 — classic被评为产品系列中的经典
- 2002年：Bravour系列产品获得技术奖 — 小型集成热泵的先锋
- 2004年：获最佳中型企业奖（德国）
- 2007年：引入变频器技术 — 变频热泵的先锋
- 2010年：Waterindoor游泳池项目获奖
- 2014年：smartheat titan 050bwi获得最佳产品奖
- 2019年：获中型企业大奖提名（德国）



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