



SPARTEK®
The comfort we need

**好热泵
思帕造**

德国思帕综合样册 product catalogue



NEU/NEW
classic power i& aero plus
带制冷的紧凑型热泵
compact heat pump with
natural cooling
能效高达A+++
energy label up to A+++

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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

德国思帕热泵--可实现远程控制
SmartHeat heat pumps- remote control

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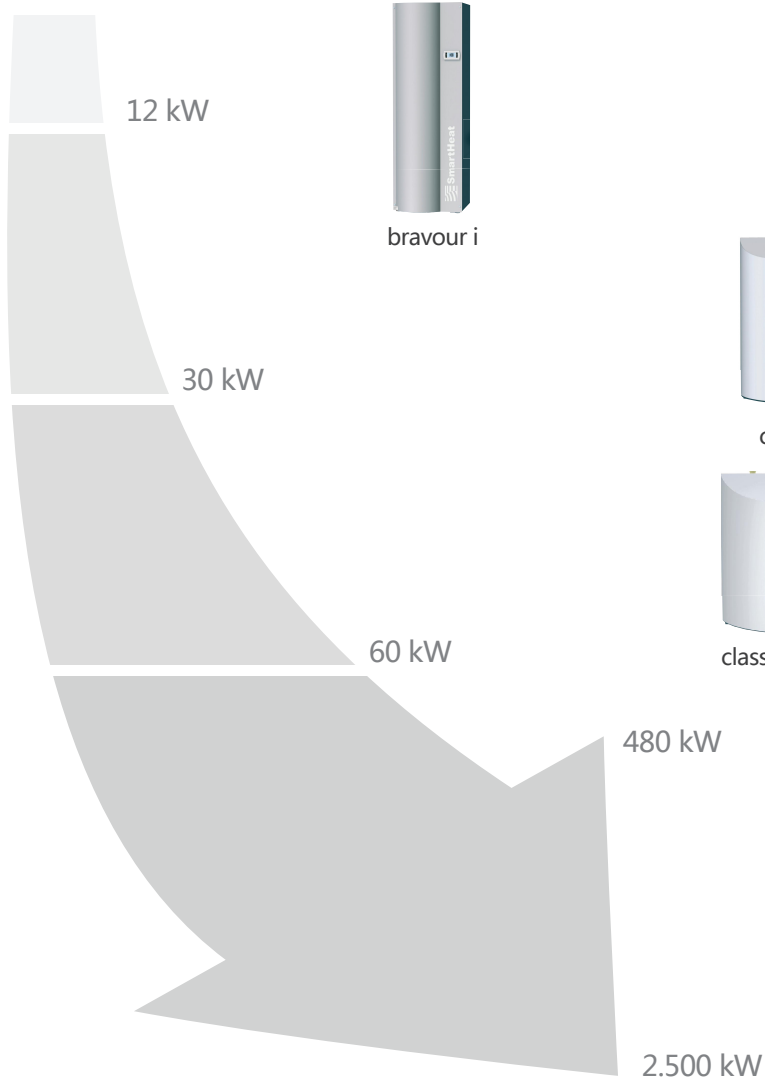
功率范围
Capacity range

bravour i

classic i

aero

Titan



bravour i



classic i



classic power i



aero 028i/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)

classic i/
classic power i

bravour i

aero/
aero plus/ air

titan

cooling shaft

reference



德国思帕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。德国思帕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。公司旗下现有德国思帕和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，德国思帕热泵都会是一个最优的空调系统备选择。此外，德国思帕热泵同样为地热设备，为工业废热和工业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

德国思帕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。我们为新建筑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。

德国思帕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，德国思帕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。

> 德国思帕一直在热泵技术的尖端

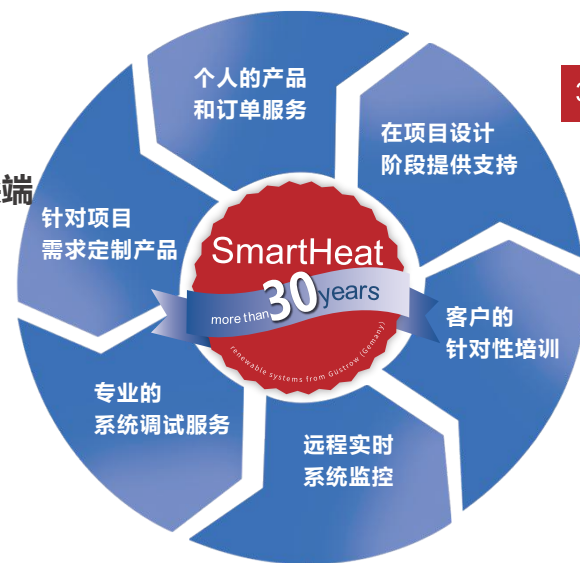
德国思帕最新的优秀设计成果当属bravour和classic power系列，还有最大功率可达168kW的空气源热泵。在高效热泵技术领域的先锋造诣为德国思帕带来很多奖项和认证，包括数个设计技术认证，VR技术奖，DGS太阳能奖，中小型企业大奖赛等等。我们为所获得的荣誉感到自豪同时也将激励我们朝着这个方向发展。

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。

德国思帕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。

> 德国思帕进中国

2017年，继续完善变频科技以适应中国新市场。2018年，德国思帕和昆山开思拓空调技术有限公司正式成立合资公司，博拓（苏州）新能源技术有限公司，同年进入中国市场。旨在为大中华区用户提供新能源高效解决方案和产品。2019年，博拓（苏州）新能源于2019年在苏州昆山市虹祺北路166号，投资建设工厂及新能源



产业园，包含生产、组装、研发测试中心、办公楼。占地面积约30亩，建筑面积约为30,000㎡，年产能约10亿。2022年，思帕热泵正式国产化，同时提供系统配套的毛细管舒适末端产品重力柜和除湿新风设备、混水泵站、分集水器等。德国思帕于2019年至今，与多家能源公司和多地政府合作，提供高效低能耗的热泵主机和解决方案。利用可再生清洁能源，再通过高效热泵机组的转化，做为区域集中供暖的能源端，从而减少燃煤供暖导致的高碳排放量。

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 Gustrow 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's. 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

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

> 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.

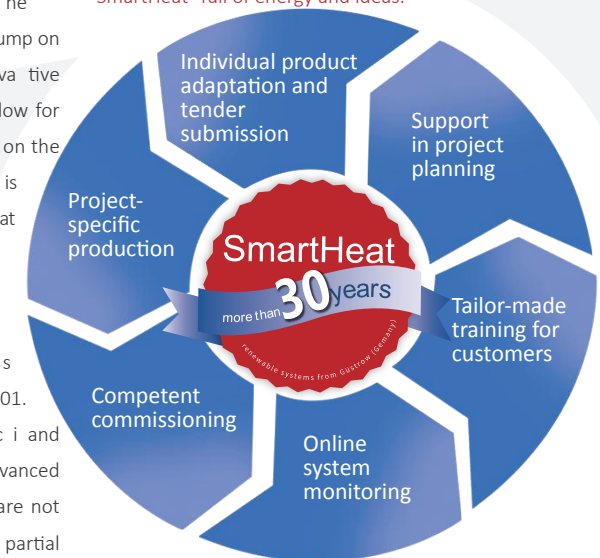
Thanks to our passion for innovation, we already have the answers to the big questions arising in the renewable energy and heating sector in the future. As a technology leader, we offer custom-engineered solutions that are not only future-proof but reflect the latest developments in technology. Whatever 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.



classic i/
classic power i

SmartHeat classic i

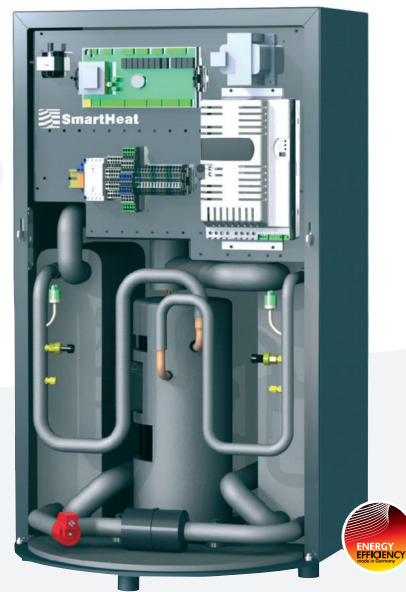
地源热泵
Water/Water heat pumps

eco INVERTER
TECHNOLOGIE

NEW



15 classic
years



classic i



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



Best selling
2018

A+++⁴⁾



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SERIE classic i

德国思帕 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）。德国思帕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。多种可选附件使德国思帕classic i系列热泵的灵活性位居 市场前列，能满足件可项目的需求。因此德国思帕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 - 35kW（制冷）

COP : B0/W35高达4.82 W10/W35高达 6.1

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

classic i/
classic power i

> 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 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 upto 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)



SERIE classic i

产品名称 Description	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	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	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	24	400;3;50	60	1 1/4"	1 1/4" [mm]	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TS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, 使用标准气候状羽口额定设计温度(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

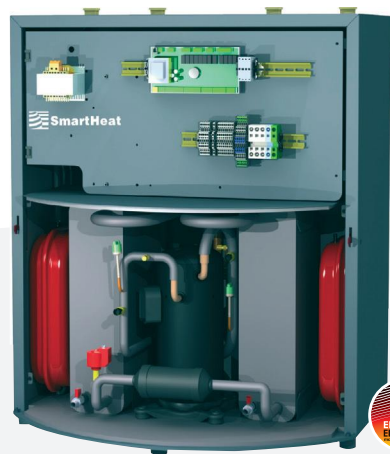
地源热泵
Water/Water heat pumps

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

2022
Best Selling

classic i/
classic power i



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SERIE classic power i

德国思帕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。

Classicpoweri可以作为地源热泵使用, 可实现制热制冷模式。

德国思帕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。

德国思帕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 - 35kW (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 600°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)



SERIE classic power i

产品名称 Description	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	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	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	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; (W35或W55) 进行计算

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

bravour i

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.



SERIE bravour i

德国思帕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德国思帕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：2-18kW（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 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:

- » Intergrating 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 SmartHeart
- » 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)



bravour i

SERIE bravour i

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×W×D Dimensions H×W×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							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]			[kg]	[dB(A)]		
SmartHeat bravour 010 i	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 × 650 × 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	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 × 650 × 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														

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5) 德国原装进口 import from German

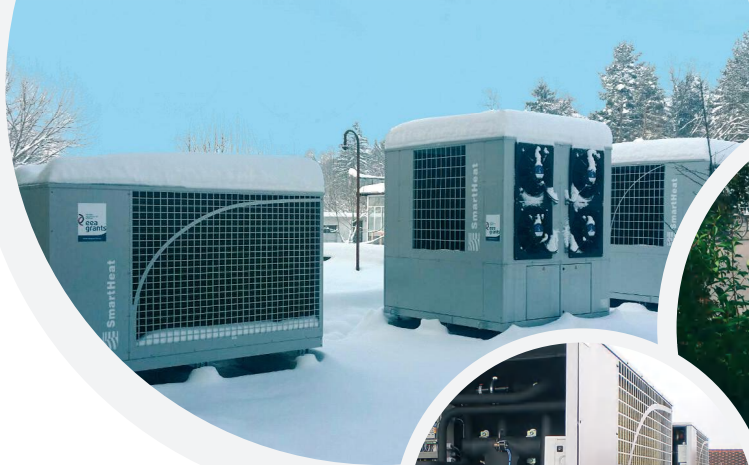
» 能效等级根据欧洲标准No. 811/2013测定, 使用标准气候状况和额定设计; (W35或W55) 进行计算

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

Spartek aero i & aero plus

空气/水-热泵，新风除湿机
Air/Water heat pumps

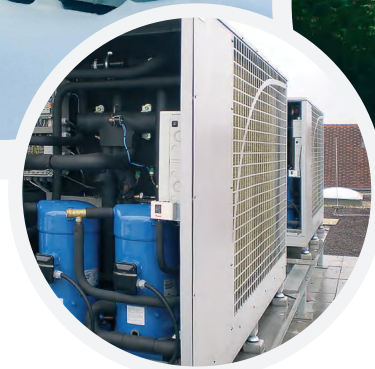
A+++³⁾



德国思帕 aero 088 plus
和 aero plus 176 联合使用
Spartek aero 088 plus
units in aero plus 176



德国思帕 aero 088
多台机组串联使用
Spartek aero 088
units in cascade
arrangement



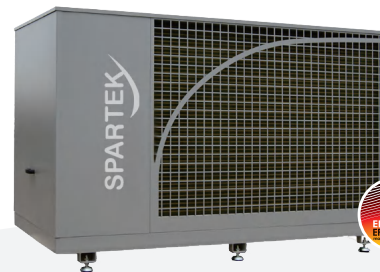
areo 028i/2



aero 032i



aero plus 044



aero plus 088



aero 168
aero plus 176

aero/
aero plus/ air



扫一扫
进入德国网站

aero 系列是小型变频热泵新风一体机，和变频空气源热泵系列。

SERIE aero i

德国思帕 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，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 4.52

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EN55014欧标
- »»获得TUV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
- »»噪音最低至40dBA



aero 032i

aero 028i/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±0.1°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 aero i

The Spartek aero i is a versatile, compact air/water heat pump for outdoor installation. Up to 50 KW, the aero 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,
- » Sound pressure min 40dBA



> 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±0.1°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 aero i

产品名称 Description	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×W×D Dimensions H×W×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]	[-]	[mm]	[kg]
SPARTEK 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 compressors	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			
SPARTEK 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	1270x1160 x665	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		

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 Hearts 3)	配合智能 温控末端 Smart Package 3)							
	[A]	[V.Ph.Hz]	[°C]	—	—	—		+ 甲	—	[Kg]	—	[L]	[dB(A)]	[mm²]	[A]
SPARTEK aero 028i/2	2x16	400;3;50	55	1"	/	1"	A++	A+++	R410a	1.76+3.3	FV50S	2.3	49	6	40
SPARTEK 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; (W35或W55) 进行计算

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

aero/
aero plus/ air

SERIE aero plus

德国思帕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（喷气增焰）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/EBM变频高效EC风机，节能又静音
- »»喷气增焰压缩机，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 plus 176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



Serie aero plus

The Spartek 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

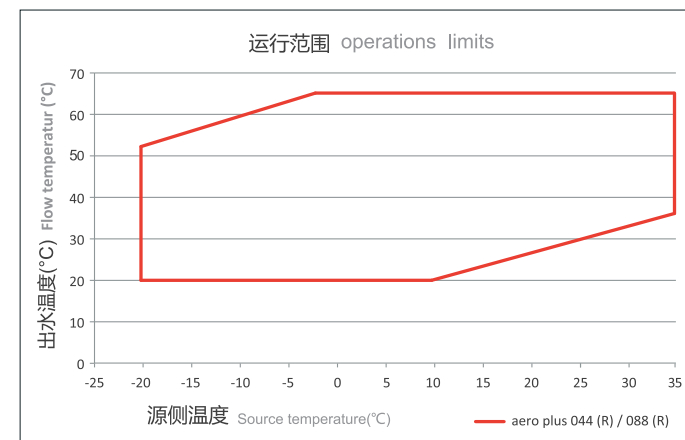
Types: Air/water

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 50C flow temp at -20 C



* 制热工况



SERIE aero plus

产品名称 Description	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation point		性能参数						尺寸 H*W*D Dimensions H*W*D	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 Powerinput	运行电流 Current			制热/制冷 能效比 COP/EER
			--	--	--	[KW]	[m³/h]	[Kpa]	[kW]	[A]	[-]	[mm]	[kg]
Spartek aero plus044	涡旋式 Scroll	1	制热 Heating	A7/W35	100%	34.32	5.91	18.00	7.87	13.00	4.42	2115*1250*775	460
			制冷 Cooling	A35/W7		36.73	6.33	27.8	9.12	14.90	4.03		
Spartek aero plus088	涡旋式 Scroll	2	制热 Heating	A7/W35	50%/100%	68.64	11.82	18.86	15.24	26.00	4.53	1510*2315*1320	790
				A-7/W39		49.28	8.47	15.25	15.90	25.40	3.10		
				A-12/W41		44.15	7.59	13.66	16.90	26.60	2.62		
				A-20/W41		34.79	5.98	10.76	17.40	34.79	2.01		
			制冷 Cooling	A-35/W7		73.74	12.70	22.73	17.81	29.80	4.13		
Spartek aero plus176	涡旋式 Scroll	4	制热 Heating	A7/W35	25%/50%/75%/100%	146.15	25.17	36.32	28.49	52.40	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	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]
Spartek aero plus044	26.7	400 ; 3 ; 50	65	2 1/2"	A ++	A +++	R407c	14	FV68S	2.6	54	10	63
Spartek aero plus088	54.3	400 ; 3 ; 50	65	2"	A ++	A +++	R407c	18	FV68S	5.2	56	16	80
Spartek aero plus176	106.8	400 ; 3 ; 50	65	2 1/2"	A ++	A +++	R407c	34	FV68S	98	56	25	160

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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)

aero/
aero plus/ air

SERIE aero plus split

德国思帕 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（喷气增焰）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℃下水温度要求50℃）。分体式安装 更加灵活，维护更加方便。

优势一览：

> 设计独特

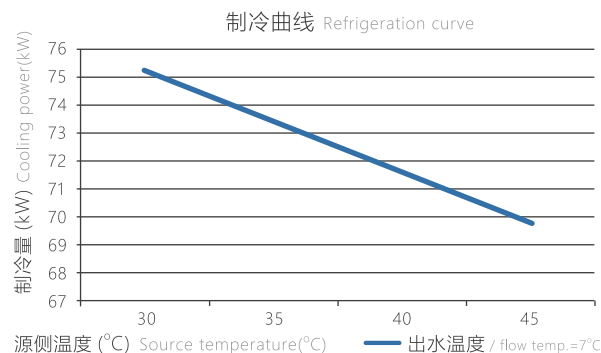
- »» 外机不含压缩机，噪音大幅降低
- »» 室外没有水管，没有受冻风险
- »» 内机小，布置在机房内，不受噪音影响
- »» 外机小巧，布置更加灵活
- »» 可实现高能效比的2档输出

> 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/EBM变频高效EC风机，节能又静音
- »» 喷气增焰压缩机，最高出水温度可达65℃
- »» 独有的智能除霜逻辑，保证最小化霜时间

Serie aero plus split

SmartHeat 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. $T_o = -20^{\circ}\text{C}$ while $T_w = 50^{\circ}\text{C}$). 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



SERIE aero plus split

产品名称 Description	压缩机类型 Compressor	压缩机数量 Compressor	工况 Operation point		性能参数							尺寸 H*W*D Dimensions H*W*D	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 Powerinput	运行电流 Current	制热/制冷 能效比 COP/EER		
			--	--	--	[kW]	[m³/h]	[Kpa]	[kW]	[A]	[-]	[mm]	[kg]
Spartek aero plus 088 split	涡旋式 Scroll	2	制热 Heating	A7/W35	50%/100%	68.64	11.82	18.86	15.24	26.00	4.53	1510*2315*1320	790
				A-7/W39		49.28	8.47	15.25	15.90	25.40	3.10		
				A-12/W41		44.15	7.59	13.66	16.82	26.60	2.62		
				A-20/W41		34.79	5.98	10.76	16.67	34.79	2.09		
			制冷 Cooling	A35/W7		73.74	12.70	22.73	17.81	29.80	4.13		

产品名称 Description	最大电流输入 max. current consumption	电源输入 Power supply	最局出水温度 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]
Spartek aero plus 088 split	53.4	400; 3; 50	65	2"	A++	A+++	R407c	17+	FV68S	5.2+	室外机 53 室内机 41	16	80

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5) 德国原装进口 import from German

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aero/
aero plus/ air

SmartHeat Titan

大型热泵和能源中心
Large scale heat pumps
and energy centres

Titan



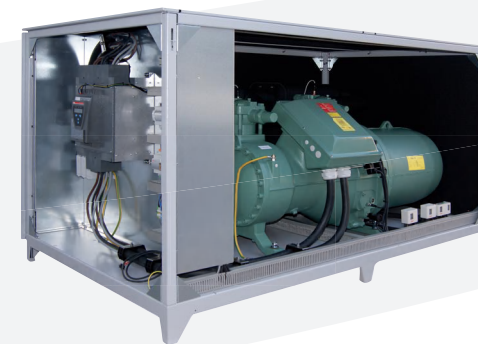
生产过程
Production in progress



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 Titan

德国思帕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，Ftan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，Ftan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
- »» 水管接口在设备后侧
- »» 多功能减震

Serie 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



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×W×D Dimensions H×W×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 076	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 1700×1005×920 带接口 with connections 1700×1005×960	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										
Spartek Titan 168	R407c	涡旋式 Scroll	制热 Heating	毛细辐射供暖 Capillary ceiling	W10/W35	50%/ 100%	158.85	28.36	47.7	5.6	100	400; 3; 50	55	2"	1200×1825×1200	750	A++	A+++	25	125
			制冷 Cooling	风机盘管 Fan coil unit	W25/W7		140.32	24.41	44.72	5.7										

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

Serie Titan

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×W×D Dimensions H×W×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	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 1840×1258×1270 带接口 with connections 1840×1258×1320	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	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 WW DIN 125	外壳尺寸 dimensions of housing 2200×1205×1445 带接口 with connections 2200×1205×1500	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	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 WW DIN 125	外壳尺寸 dimensions of housing 2200×1205×1445 带接口 with connections 2200×1205×1500	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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» energy efficiency of EU-Journal No. 811/2013, average climate conditions - temperature (W55 or W35)

Titan

Serie Tian HT

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		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 053 HT	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	18464	6.30										
			制冷 Cooling	风机盘管 Fan coil unit	W25/W7		52.34	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 107 HT	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 164 HT	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										

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; (W35或W55) 进行计算

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

SERIE Therm Select

德国思帕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

Serie Therm Select

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).

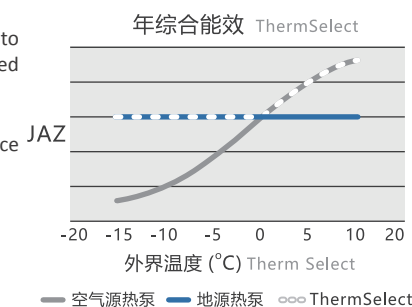
Combination of Two Systems with High Integration

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			噪音水平 Sound	
						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)		制冷剂重量 Refrigerant weight
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	4.09										
			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										

aero/
aero plus/ air

SERIE air

德国思帕 air 是内置压缩机的除湿新风机系列，根据安装空间和要求可选双冷源一体机和单冷源分体机解决方案，深度除湿、加湿、温度控制、远程操作均可以实现。高效EC风机和双层隔板的钣金设计，为设备的降噪和防结露提供特殊的工艺设计。

类型：除湿新风机

风量范围：双冷源一体机300/500m³/h

单冷源分体机300/500m³/h

优势 一览：

- »»制冷、制热、除湿、加湿、净化五大功能
- »»恒温恒湿、高效湿膜加湿技术
- »»G4H11双重HEPA滤芯，过滤99%以上PM2.5
- »»可根据表冷器处空气温度和盘管水温，自定义防冻逻辑
- »»制冷模式下，根据除湿和制冷需求，调节出风温度：10~26°C
- »»制热和通风模式下，可根据项目需求，设定目标湿度进行加湿



Air 双冷源除湿新风一体机

技术特点：

- »»直流变频技术，精确除湿控制
- »»恒风量EC电机，高静压低噪音
- »»冷凝再热技术，实现降温、等温、升温除湿自动调节
- »»侧出风、下出风、左右接适应多样化安装设计选型
- »»模块化设计，尺寸小，高结构强度，维护方便

Air aero split单冷源除湿新风分体机

技术特点：

- »»全直流变频技术，精确除湿、加热控制
- »»恒风量EC电机，高静压低噪音
- »»冷凝再热技术，实现降温、等温、升温除湿自动调节
- »»侧出风、下出风、左右接适应多样化安装设计选型
- »»模块化设计，尺寸小，高结构强度，维护方便

Serie air

Aero air is a series of fresh air dehumidifier unit, according to the installation space and requirements, you could choose from dual source unit and single source split unit solution. Deep dehumidification, humidification, temperature control, remote operation can be realized. The silver design of the high-efficiency EC fan and double-layer separator provides a special process design for noise reduction and condensation prevention of the equipment.

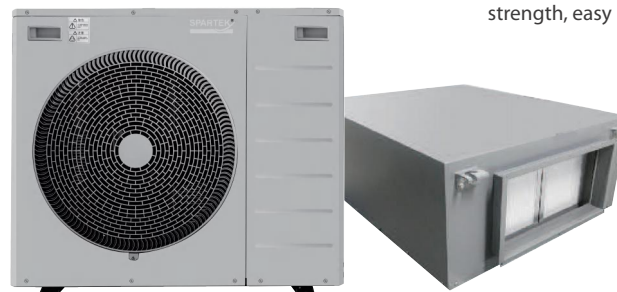
Type: Fresh air dehumidifier unit

Air flow rate: Dual source unit 300-/500m³/h

Single source split unit 300-/500m³/h

Advantages at a glance:

- »»Refrigeration, heating, dehumidification, humidification, purification five functions
- »»Constant temperature and humidity, high-efficiency humidification technology G4/H13 HEPA filter, filter PM2.5 above 99%
- »»According to the air temperature and water temperature detected from the coil, SPARTEK could customize the antifreeze logic
- »»In cooling mode, adjust the outlet air temperature to 15~25°C, according to the needs of dehumidification and refrigeration request
- »»In heating and ventilation mode, humidification can be set according to the needs of the project



Air Dual source fresh air dehumidifier unit

Advantages at a glance:

- »»DC frequency conversion technology precise dehumidification control
- »»Constant air volume EC motor, high static pressure and low noise
- »»Condensation and reheat technology to achieve cooling, heating and dehumidification automatic adjustment
- »»Side air outlet, lower air outlet, left and right connection to adapt to diversified installation design selection
- »»Modular design, small size, high structural strength, easy maintenance

Air aero split single source fresh air dehumidifier unit

Advantages at a glance :

- »»Full DC frequency conversion technology, precise dehumidification, heating control and humidification
- »»Constant air volume EC motor, high static pressure and low noise
- »»Condensation and reheat technology, to achieve cooling, heating and dehumidification automatic adjustment
- »»Side air outlet, lower air outlet, left and right connection to adapt to diversified installation design selection
- »»Modular design, small size, high structural strength, easy maintenance

SERIE Air

Air 双冷源除湿新风一体机

型号	新风量	机外余压	送风口尺寸	取风口	除湿出风温度	制热出风温度	滤网等级	冷却水进水温度	冷却水出水温度	水流量	除湿量*	水侧阻力	供回水接管尺寸	冷凝水管尺寸
	m ³ /h	Pa	mm	mm	°C	°C	/	°C	°C	m ³ /h	kg/h	Kpa	inch	inch
Air 300	300	120	Φ148	442x237	10~26	18-30	G4+H11	16	19	1.5	4.5	30	R1	R1/2
Air 500	500	120	189x389	442x237	10~26	18-30	G4+H11	16	19	2.5	7.5	30	R1	R1/2

型号	加湿接管尺寸	长	宽	厚	压缩机类型	风机类型	风机功率	额定功率	通讯协议	电源	噪音值	整机重量
	inch	mm	mm	mm	/	/	W	W	/	/	/	kg
Air 300	R3/4	1185	670	310	直流变频	恒风量EC电机	100	500	Modbus 485 RTU	220~50Hz	46	75
Air 500	R3/4	1185	670	310	直流变频	恒风量EC电机	150	800	Modbus 485 RTU	220~50Hz	48	83

SERIE Air aero split

Air aero split 单冷源除湿新风分体机

型号	新风量	机外余压	送风口尺寸	取风口	除湿送风温度	制热出风温度	除湿量*	滤网等级	室外机尺寸长x宽x高	风模块尺寸长x宽x高	液管尺寸	气管尺寸
	m ³ /h	Pa	mm	mm	°C	°C	kg/h	/	mm	mm	mm	mm
Air aero split 300	300	120	Φ148	442x237	10~26	18~35	4.5	G4+H11	780*290*605	904x652x290	6.35	12.7
Air aero split 500	500	150	189x389	442x237	10~26	18~35	7.5	G4+H11	925x365x795	904x652x290	9.52	16

型号	排水接管尺寸	加湿接管尺寸	压缩机类型	风机类型	风机功率	额定功率	电源	内/外机噪音	风模块重量	室外机重量
	inch	inch	/	/	W	W	/	dB	kg	kg
Air aero split 300	R1/2	R3/4	直流变频	恒风量EC电机	100	2200	220~50Hz	45/49	37	35
Air aero split 500	R1/2	R3/4	直流变频	恒风量EC电机	150	4200	220~50Hz	48/58	47	64

* 全新风状态下

aero/
aero plus/ air

思帕智控系统

热泵需要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。思帕智能控制系统保证热泵在其最佳状态下工作。

> 标准功能

- » 卡乐/西门子电子控制器
- » 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ZD兄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
- » 热水制备中集成消除军团杆菌模块
- » 防冻保护措施
- » 为空气热泵配置除霜控制
- » 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
- » 可根据需要预设记录的变量
- » 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

- » 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
- » 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。

SPARTEK-multi intelligent control 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

- » 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*

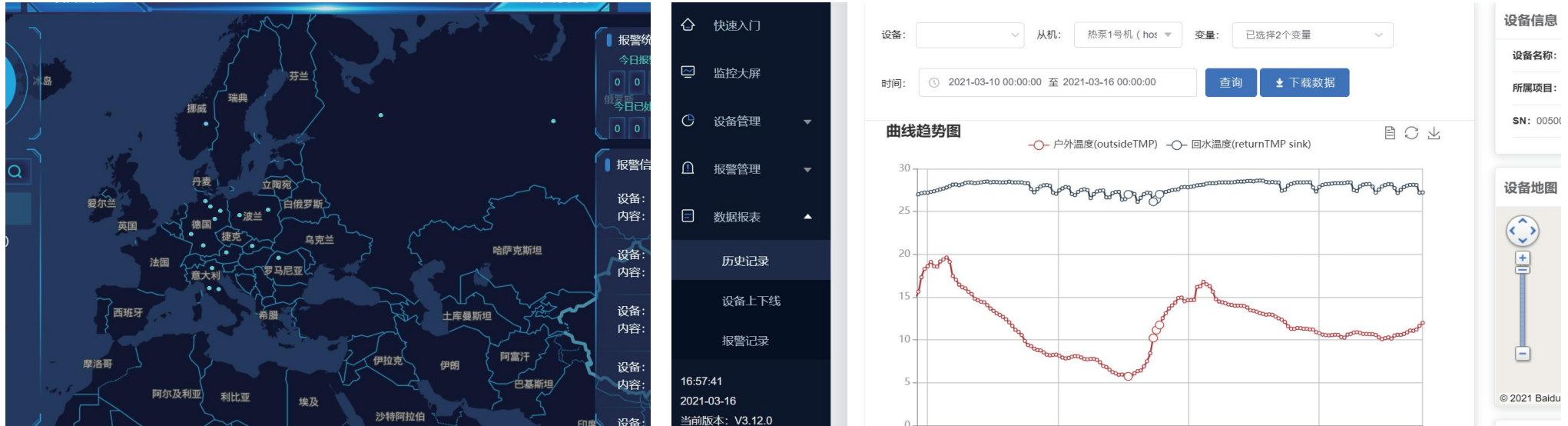
- » Various analogue and digital inputs / outputs
- » Broad range of compatible sensors and actuators
- » Evaluation of single-ended and floating signals
- » Digital SEPR calculator

> 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

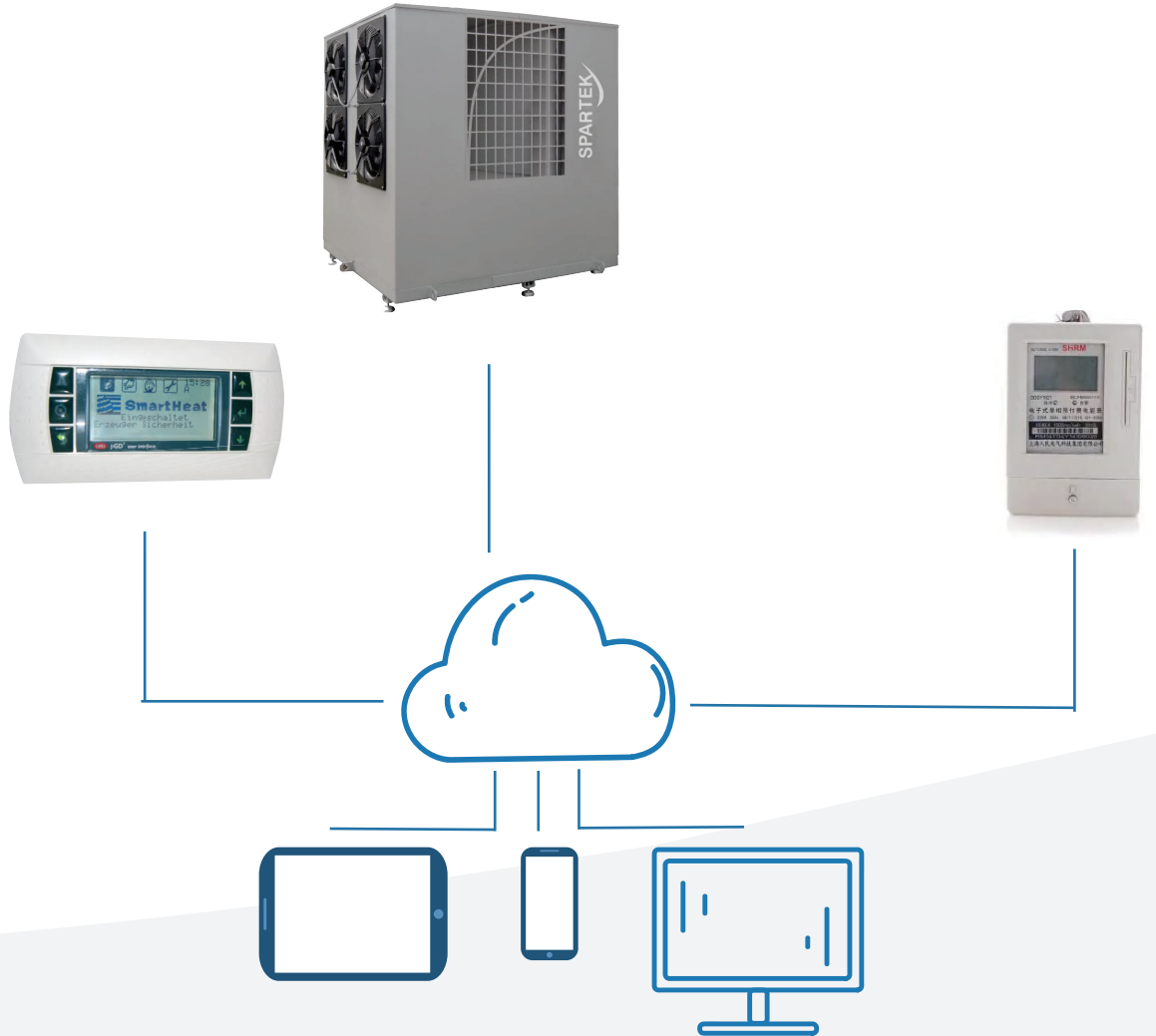
* nicht alle Ausstattungsvarianten sind kombinierbar
Please note that not all above options can be combined

思帕能源云管理系统 - 点亮您的设备地图



思帕云管理平台，提供数据云平台管理系统，实现实时采集和多终端信息交互，历史数据时时调取，如出现故障报警信息第一时间发给紧急联系人。全球范围内项目地图，可实现远程多个项目协同。与AIoT结合，可实现漏氟预警，关键参数预警报警，负荷预测，系统能效计算，碳计算等功能。

思帕能源云管理系统



集分水器



集分水器由抗腐蚀塑料制成，带有封闭式红铜螺钉，因此确保了长使用寿命和稳定性。由于集成的空气腔，集分水器具有自保温性，因此无需加额外保温

组件包含：

1. 流量计（带调节陶）
2. 供回水温度计，球阀，压力表
3. 带有螺钉和木钉的墙壁支架
4. 热力执行器 24/230V

混水中心



应用于供热/制冷系统中，安装于热源和末端设备之间，对系统介质进行循环。

组件包含：

三通混水阀、电动执行器、温度计、压力表、一体模块化设计、球阀、高效节能循环泵。

露点控制器



露点控制器适用于顶面或地面的单辐射系统或顶面加地面的双辐射系统。通过室内温度和设定温度的比较，对辐射空调系统末端的热电阀进行控制，以达到调节室内温度、舒适和节能的目的，在表面即将结露前，预先关闭进水阀门，起到防结露功能的智能控制。

SERIE GRAVIMAT cooling shaft

德国思帕重力柜——利用自然对流和辐射原理进行制冷/制热



COOLING

享受辐射生态
系统的舒适



DEHUMIDIFY

没有吹风感
却可以除湿



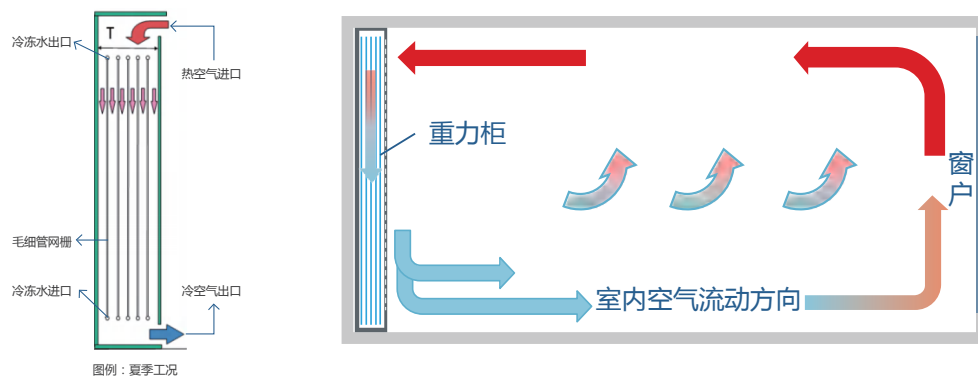
HEATING

享受暖气片
系统的惬意

机械式的空调，如风机盘管，消耗电能；强制空气流动，急促的气流，产生风机的噪音。传统空调需要定期维护，冷热不均，使室内环境长期处于亚健康状态。

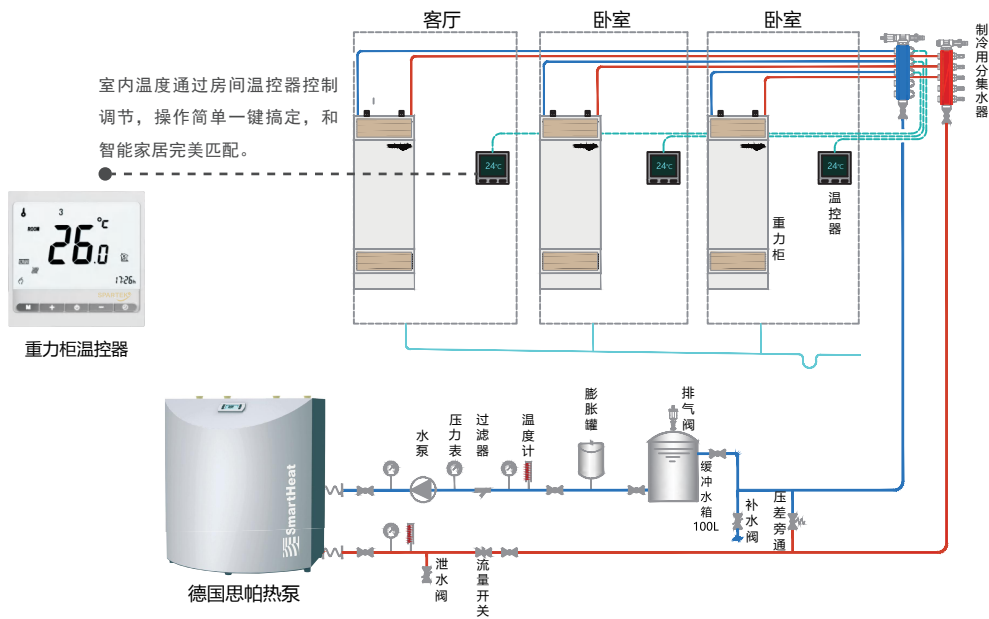
重力柜一个设备会帮您解决所有问题，简单同时蕴含着德国精湛的技艺，舒适体现于重力柜自然的呼吸，简单，舒适，高效，健康就是如此。

在夏季，较热的室内空气从柜体的上部进入，被通有冷冻水（7°C）的毛细管网冷却，在重力的作用下，被冷却的空气向下流动，带走房间内的温度和湿度，全过程都不需要消耗额外的能量。在冬季，毛细管内需要45°C热水，辐射和自然对流结合为房间提供热量。



SERIE GRAVIMAT cooling shaft

重力柜系统



重力柜应用和传统水系统设计原理类似，整个系统需要热泵主机、水路分配器，并搭配控制系统实现房间温度控制，或进行远程控制。

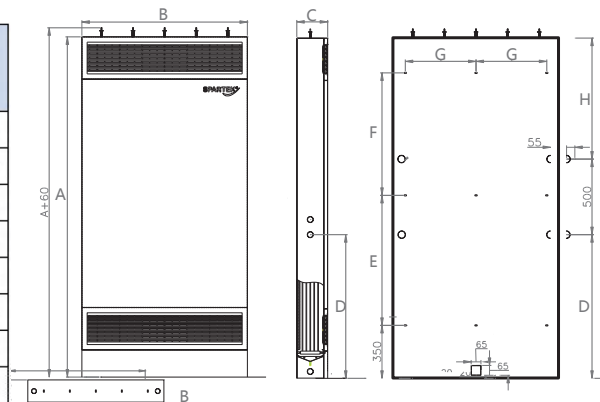
但跟传统的风机盘管系统不同的是，重力柜把辐射和对流紧密结合，效果加倍功能更强。再结合置换通风的原理，设计指标可较传统空调降低40%-60%，降低系统能耗。

夏季也可开窗，不畏室外湿度干扰，自主调节室内热湿环境，使房间与自然环境同呼吸。

重力柜安装步骤

- 1.准备工作
- 2.取下面板
- 3.重力柜就位，固定
- 4.接冷凝水管
- 5.接供回水管
- 6.清洗注水排气
- 7.试压
- 8.安装所有面板

重力柜型号/尺寸	GS-T/S	GS-S/S	GS-H/S	GS-T/3	GS-S/3	GS-H/3
A mm	2000	2250	2500	2000	2250	2500
B mm	700	1100	1100	700	1100	1100
C mm	205	205	205	155	155	155
D mm	700	950	950	700	950	950
E mm	760	860	860	760	860	860
F mm	660	810	1060	660	810	1060
G mm	270	470	470	270	470	470
H mm	800	800	1050	800	800	1050



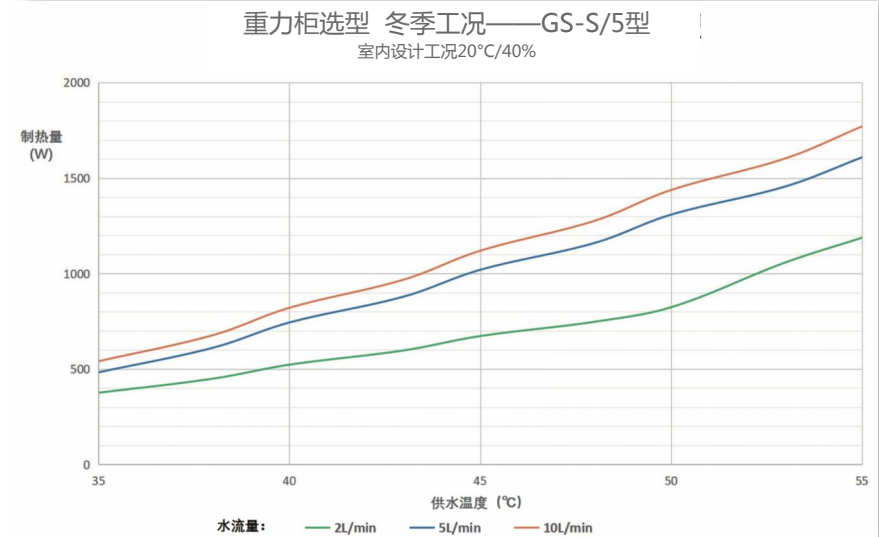
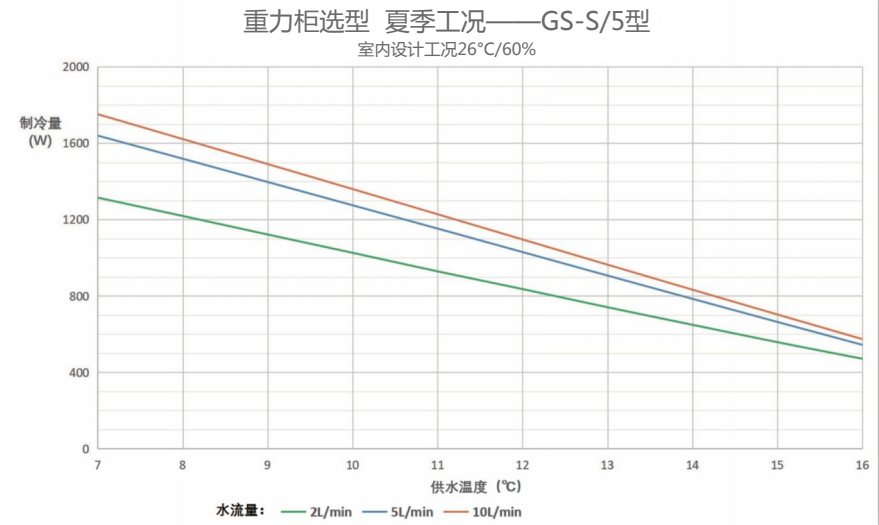
SERIE GRAVIMAT cooling shaft

重力柜参数及供冷供暖能力



重力柜型号	GS-T/5	GS-S/5	GS-H/5
柜子净尺寸(mm)	2000x700x205	2250x1100x205	2500x1100x205
毛细管尺寸(mm)	1750x600	2000x1000	2250x1000
毛细管网片数	5	5	5
全热制冷量(7°C供水, 5L/min,W)	958	1640	1804
除湿量(26°C-60%, g/h)	569	959	1041
制热量(45°C供水, 5L/min,W)	707	1020	1096
建议匹配空调面积(m ²)	10~16	16~27	18~30

重力柜型号	GS-T/3	GS-S/3	GS-H/3
柜子净尺寸(mm)	2000x700x155	2250x1100x155	2500x1100x155
毛细管尺寸(mm)	17.50x600	2000x1000	2250x1000
毛细管网片数	3	3	3
全热制冷量(7°C供水, 5L/min,W)	692	1247	1374
除湿量(26°C-60%, g/h)	402	713	775
制热量(45°C供水, 5L/min,W)	561	910	990
建议匹配空调面积(m ²)	7~12	12~21	13~23



Reference
业绩



西门子斯图加特总部
型号：aero 168



埃尔福特歌剧院
型号:aero 080



罗斯托克大学图书馆
型号：Titan SW80



Kleine Traber 日间托儿中心
型号：aero plus088



霍夫海姆兽医诊所
型号：Titan 120 BW



德国Bosbüll市区域集中供热
类型：aero 168
用途：区域集中供热

Reference 业绩

长春爱尔铃克铃尔工厂改造

地点：长春

业主：爱尔铃克铃尔

建筑类型：工业厂房

型号：aero plus 088

热源：工业废气

用途：热回收

应用热泵系统后，综合节能

效果达到80%



BDR喜德瑞嘉兴工厂

型号：titan 729



丽枫酒店（天津梅江会展中心山姆会员店）

地点：天津

型号：能源箱

Reference 业绩

沈阳康莱德酒店热水系统

地点：辽宁沈阳

型号：Classic power 032i

用途：生活热水



月节省了约16万人民币的运行费用，仅3年就可以收回初投资成本。



上海市杨浦水质监测站

型号：aero 028i/2

屋顶配有光伏板，产生电能可用于建筑自身使用，或用锂电池储存，也可用于氢气制备。

Reference
业绩



太保家园国际颐养社区

地点：上海、成都、杭州、崇明、厦门、南京等

型号：重力柜，aero系列热泵

舍弗勒大中华区总部及研发中心

地点：上海

型号：重力柜，金属冷辐射吊顶



Reference
业绩



上海古北壹号

型号：aero 168



上海海泰北外滩项目

型号：aero plus 044



南京九月森林

型号：classic power 032i



上海御翠园

型号：classic power 032i

Reference
业绩

上海华府天地 型号：aero plus044



上海翠湖天地 型号：aero 168



淮海路老洋房 型号：aero 032i



北京远洋LAVIE 型号：aero 168

Reference
业绩



上海虹桥华庭
型号：aero 028i/2



深圳水木一方
型号：aero 028i/2



天津欣悦华庭
型号：aero 028i/2



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德国思帕热泵荣誉一览

- 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：Waterindoo游泳池项目获奖
- 2014年：smarheat 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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