

上海本菱新能源科技有限公司

SHANGHAI BENLING NEW ENERGY TECHNOLOGY CO., LTD.



电动空调压缩机

ELECTRIC AIR-CONDITIONING
COMPRESSOR



超越期待 引领行业 创新未来



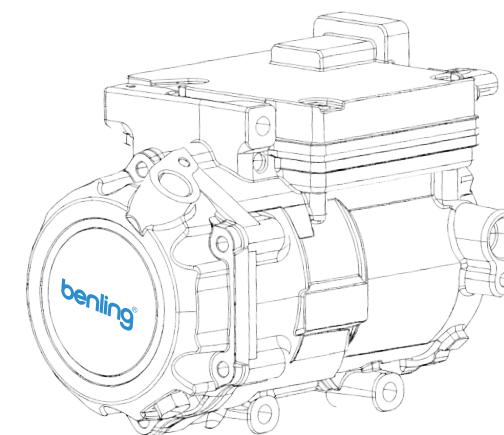
上海本菱新能源科技有限公司

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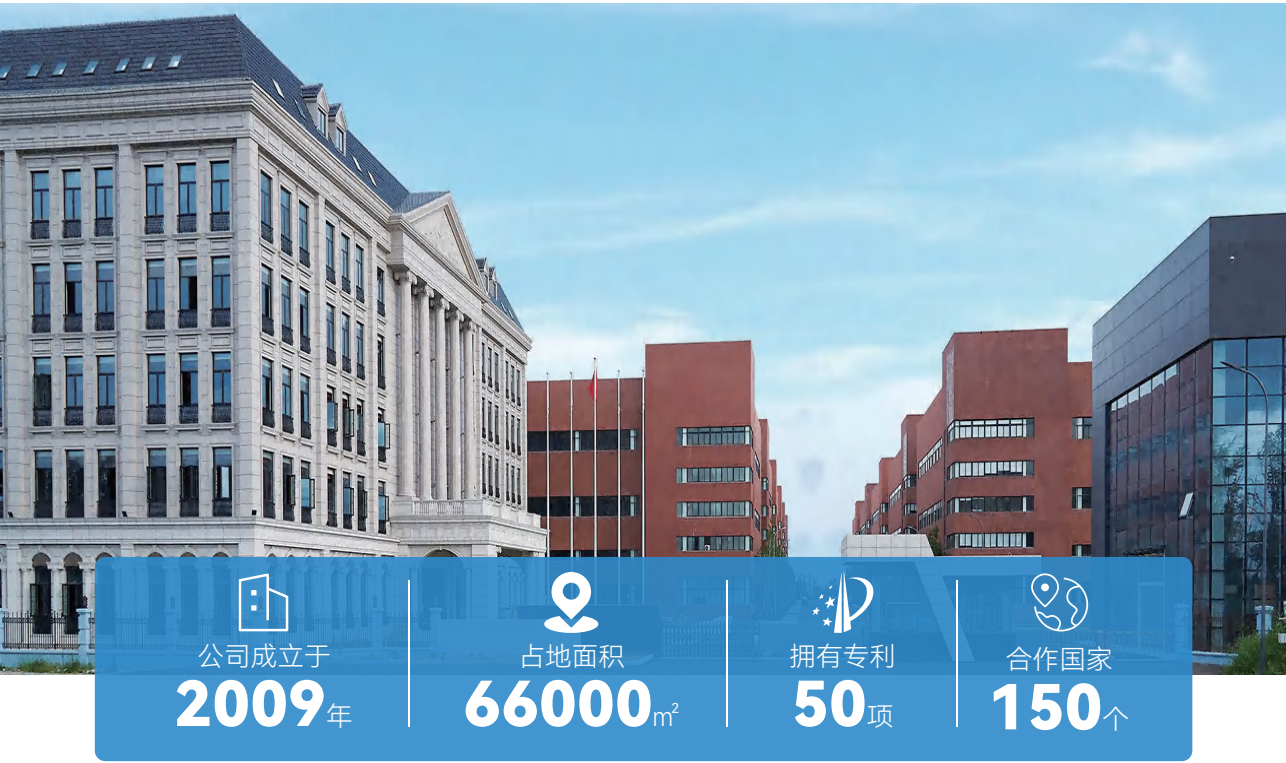
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NEV Thermal Management Control & Drive Controller

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Company Profile

公司简介

超越期待 引领行业 创新未来
Beyond Expectations. Navigating Leadership. Inspiring New Growth



公司成立于
2009年

占地面积
66000m²

拥有专利
50项

合作国家
150个

上海本菱新能源科技有限公司(BENLING) 成立于2009年，是一家集研发、设计、生产、销售于一体的国家级高新技术企业，致力于新能源汽车热管理及座舱舒适性的研发与智造，涉及产品种类包含电动涡旋压缩机、热管理控制器、制氧机等相关领域。

Shanghai Benling New Energy Technology Co., Ltd. (BENLING), founded in 2009, is a national high-tech enterprise integrating R&D, design, production, and sales. Benling is dedicated to the R&D and intelligent manufacturing of thermal management and cabin comfort systems for new energy vehicles. Our main products cover electric scroll compressors, thermal management controllers and oxygen generators.

BENLING作为汽车工业协会会员单位，在行业内深耕多年，拥有实用专利40项，新型专利10项，并取得了“国家高新技术企业”，“上海市专精特新企业”，“上海市科技小巨人”，“奉贤区四新经济示范企业”等荣誉称号，同时也通过了“IATF16949”及“ISO14001”体系认证。

As a member of the China Association of Automobile Manufacturers, Benling has been deeply engaged in the industry for many years. We hold 40 utility patents and 10 innovation patents, and has been honored with titles such as “National High-tech Enterprise”, “Shanghai Specialized, Refined, Distinctive and Innovative Enterprise”, “Shanghai Science & Technology Little Giant”, and “Fengxian District Four-new Economy Demonstration Enterprise”. Benling is also certified under IATF 16949 and ISO 14001.

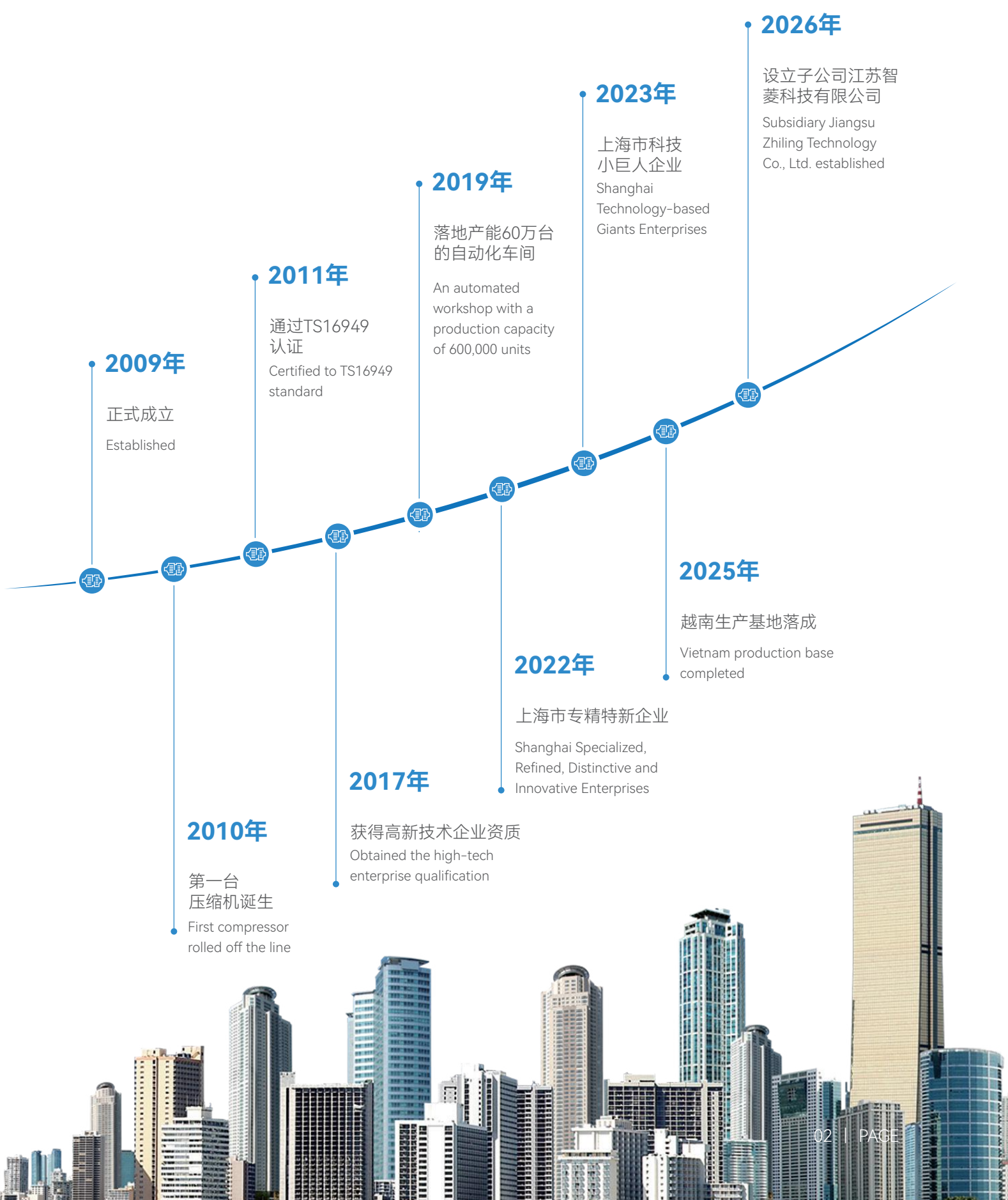
BENLING业务版图辐射全球，客户遍及海内外市场，产品远销欧洲、美洲、东南亚、大洋洲、南非等地区。企业具备自营出口资质，持有“CE”，“E-mark”等国际产品认证。同时拥有印度、越南本土公司，可全方位承接东南亚本地化生产与属地配套服务。

Benling's business footprint extends globally, serving customers in both domestic and international markets. Our products are exported to Europe, the Americas, Southeast Asia, Oceania, South Africa, and other regions. Benling holds self-operated export qualifications as well as international product certifications such as CE and E-mark. In addition, we have established local subsidiaries in India and Vietnam, enabling full-service localized production and local supporting services across Southeast Asia.

Development History

发展历程

超越期待 引领行业 创新未来
Beyond Expectations. Navigating Leadership. Inspiring New Growth



Honors and Recognition

荣誉及认可

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IATF16949

ISO14001

CE



Patent Certificate

专利证书

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Production line

生产线

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10万级无尘洁净度、正压控制、恒温恒湿；
Class 100,000 cleanroom environment, positive pressure control, constant temperature and humidity;



高自动化、高信息化、上线全检测、AI全过程防错互锁；产线MES与工厂MOM对接，防止不合格品流出；
High automation, high informatization, full-process inspection, AI-powered error prevention and interlocking throughout the entire process; Production line MES interfaces with factory MOM to prevent defective products from leaving the factory;



200余套防错装置；位置传感器、压力传感器、视觉传感器、ID数据监控；
Over 200 error prevention devices; position sensors, pressure sensors, vision sensors, and ID data monitoring;

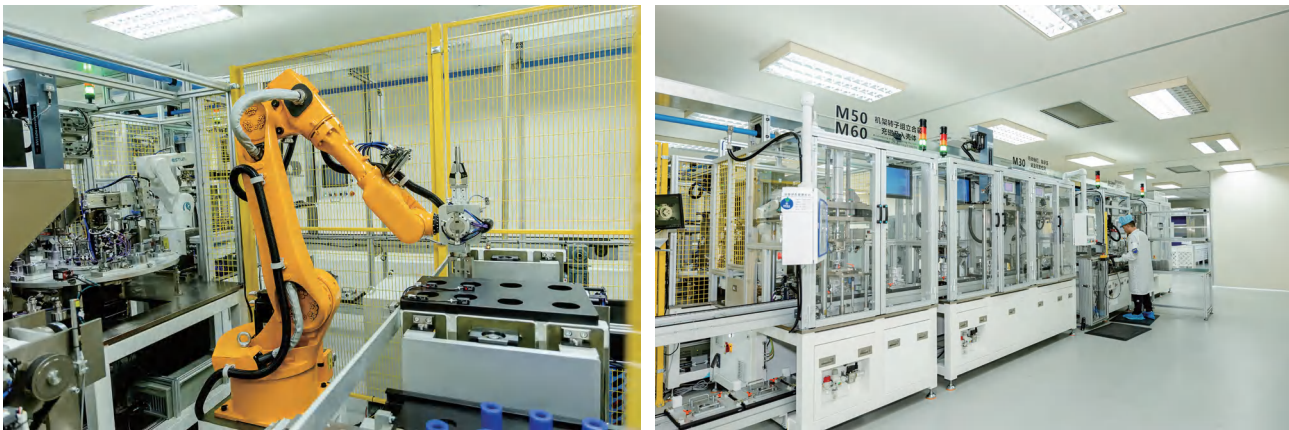


二维码全流程数据采集、可视化、AGV智能物流配送；
QR code-based full-process data collection and visualization, AGV intelligent logistics delivery;



改进措施包括主动预防、被动预防、探测预防和联合预防。
Improvement measures include proactive prevention, passive prevention, detection-based prevention, and combined prevention;

● 装配车间 ASSEMBLY WORKSHOP



● 加工车间 PROCESSING WORKSHOP



在质量体系管理方面，我们已获得IATF16949体系认证，并拥有超过十年与主机厂及空调系统厂商进行质量体系对接的丰富经验。

In terms of quality system management, we have obtained IATF 16949 certification and possess over a decade of extensive experience in aligning quality systems with automotive manufacturers and HVAC system suppliers.



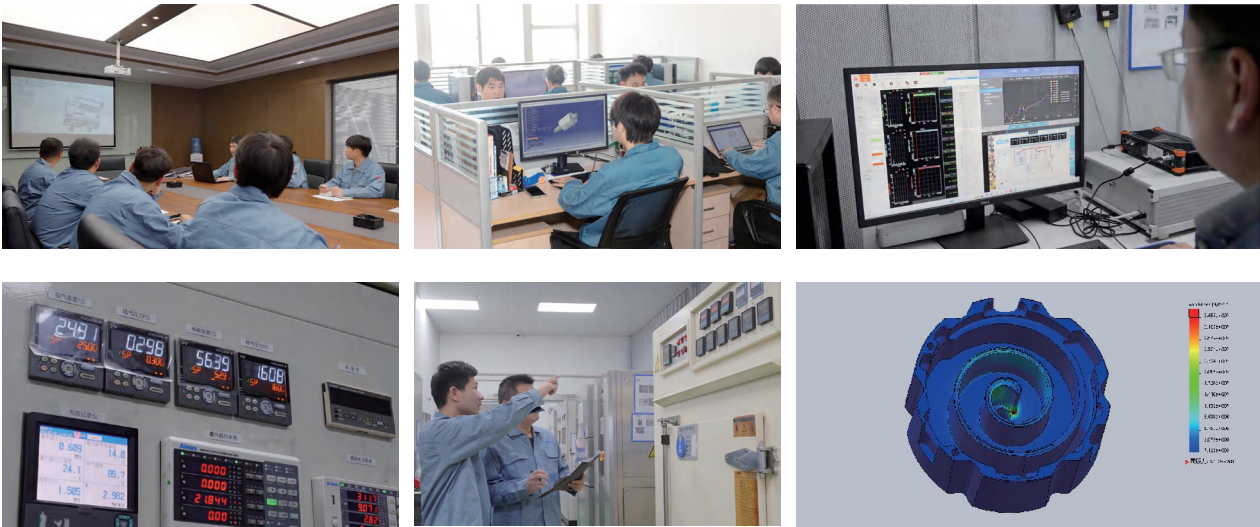
我们的质量方针始终以“精益求精、持续改进、务实专注、打造精品”为核心导向，致力于为客户提供高品质的产品与服务。

Our quality policy remains steadfastly guided by the core principles of “pursuing excellence, continuous improvement, pragmatic focus, and crafting premium products,” dedicated to delivering high-quality products and services to our customers.



技术和研发

- 核心团队均为资深技术骨干，平均行业经验超十年
Core team consists of senior technical professionals with an average of over ten years of industry experience.
- 构建了覆盖关键技术的矩阵式团队架构，实现全链路专业支撑
Established a matrix team structure covering key technologies, enabling full-chain professional support.
- 积累了丰富的产品平台全周期落地经验，交付成功率100%
Accumulated extensive experience in full-cycle product platform implementation, with a 100% delivery success rate.





Main Products

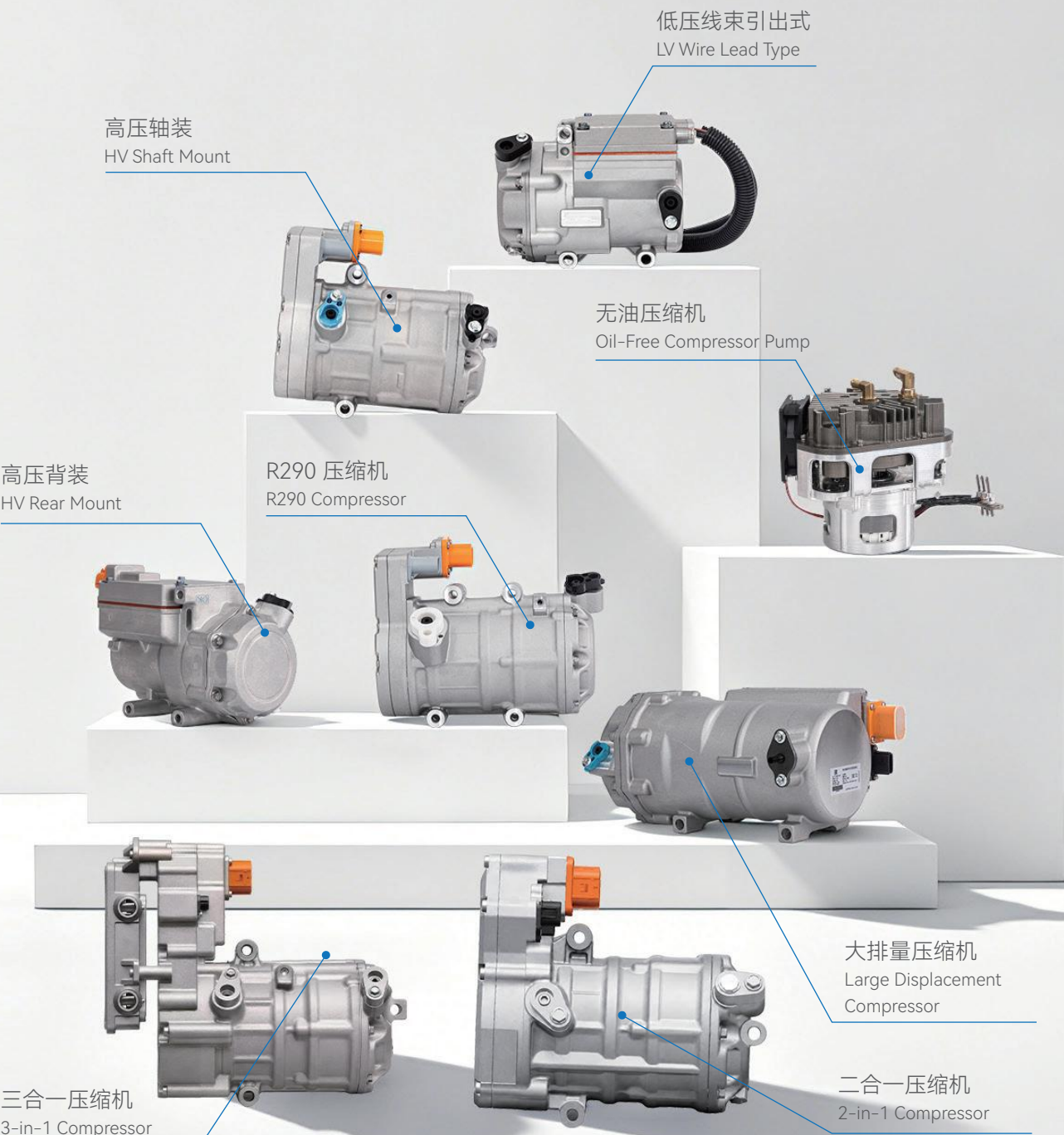
主要产品

电动涡旋压缩机

Electric Scroll Compressor

14CC-80CC 全系列排量 · 12V-1000V 宽电压适配

Full Displacement 14CC-80CC · Wide Voltage 12V-1000V



新能源汽车热管理控制&驱动控制器

NEV Thermal Management Control & Drive Controller



储能·车载·超充热管理 & CDU 假负载系统

Thermal Management for Energy Storage, Vehicle & Supercharger | CDU Dummy Load System



Electric Scroll Compressor

电动涡旋压缩机

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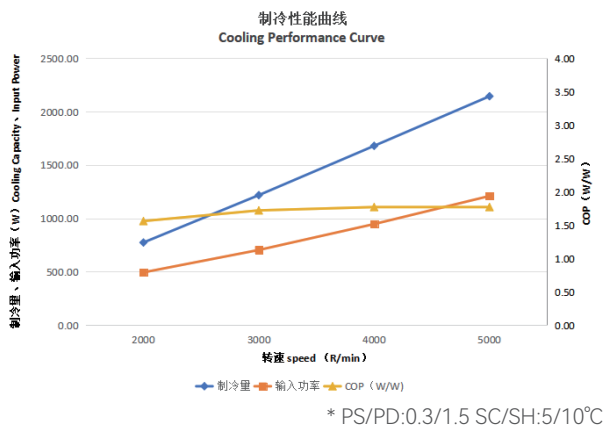


压缩机系列 DM14

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf/R404a
排量 Displacement	14CC
额定电压 Rated voltage	12V
常用转速范围 Common speed range	2000~5000rpm
通信 Communication	CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40℃~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	5.4kg
防护等级 Protection rating	IP67

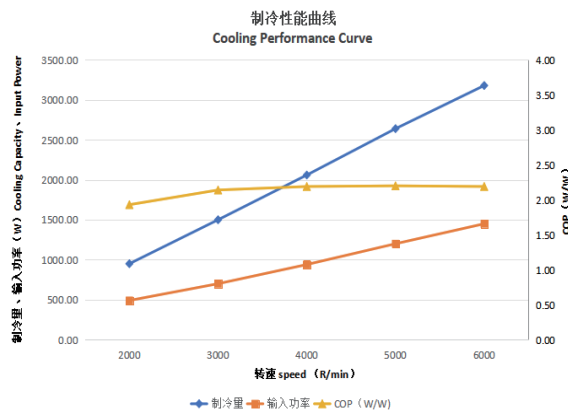
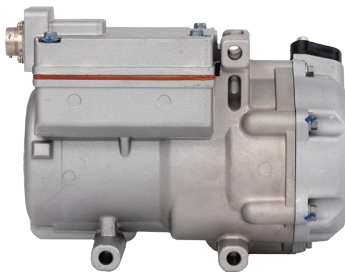


压缩机系列 DM18

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf/R404a
排量 Displacement	18CC
额定电压 Rated voltage	12V/24V/48V/72V/96V/144V/312V
常用转速范围 Common speed range	2000~6000rpm
通信 Communication	LIN、CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40℃~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	5.5kg
防护等级 Protection rating	IP67

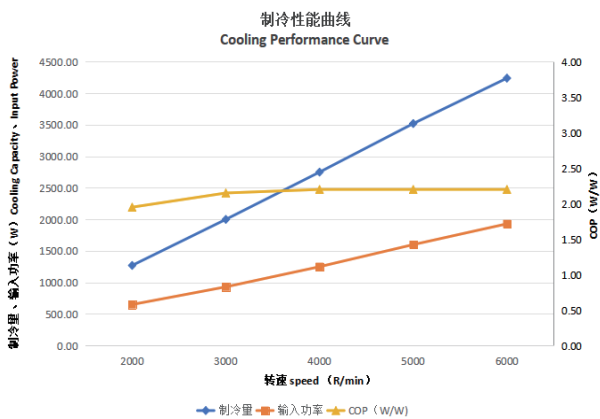
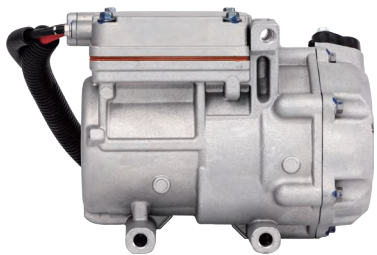


压缩机系列 DM24

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	24CC
额定电压 Rated voltage	24V
常用转速范围 Common speed range	2000~6000rpm
通信 Communication	LIN、CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40℃~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	5.8kg
防护等级 Protection rating	IP67

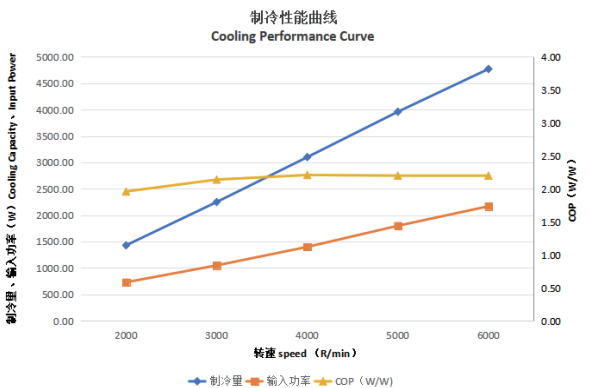
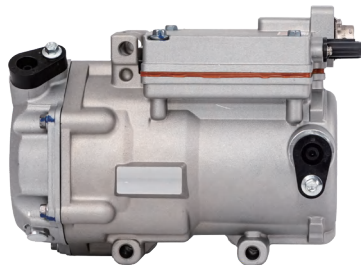


压缩机系列 DM27

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf/R404a
排量 Displacement	27CC
额定电压 Rated voltage	24V/48V/72V/96V/144V/312V/540V
常用转速范围 Common speed range	1000~6000rpm
通信 Communication	LIN、CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40℃~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	6.0kg
防护等级 Protection rating	IP67



Electric Scroll Compressor

电动涡旋压缩机

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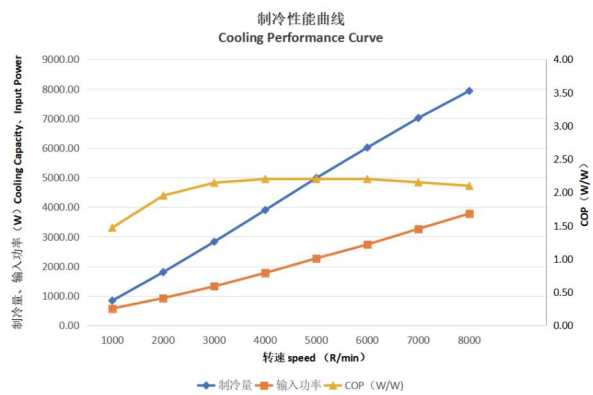
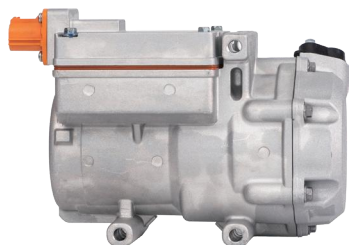
压缩机系列 Compressor series

DM34

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf/R404a
排量 Displacement	34CC
额定电压 Rated voltage	48V/144V/312V/350V/540V
常用转速范围 Common speed range	1500~6000rpm
通信 Communication	LIN、CAN、PWM、Gear
工作温度 Operating temperature	-20°C~+85°C
储存温度 Storage temperature	-40°C~+120°C
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	6.4kg
防护等级 Protection rating	IP67



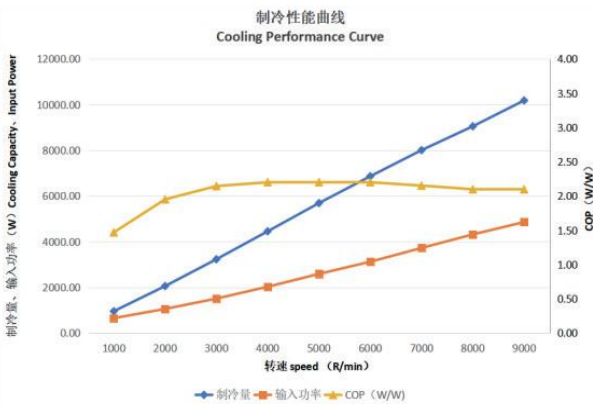
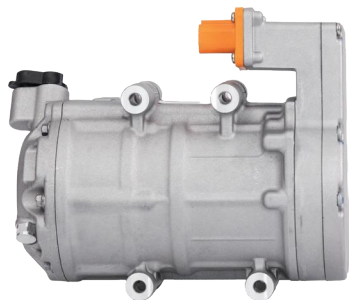
压缩机系列 Compressor series

CM40

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	40CC
额定电压 Rated voltage	592V
常用转速范围 Common speed range	1000~9000rpm
通信 Communication	CAN
工作温度 Operating temperature	-20°C~+90°C
储存温度 Storage temperature	-40°C~+120°C
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	7kg
防护等级 Protection rating	IP67



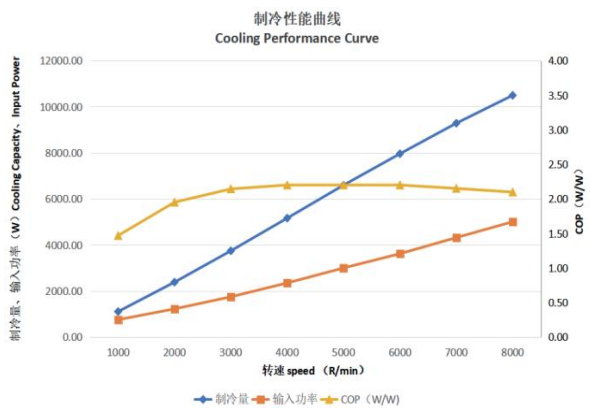
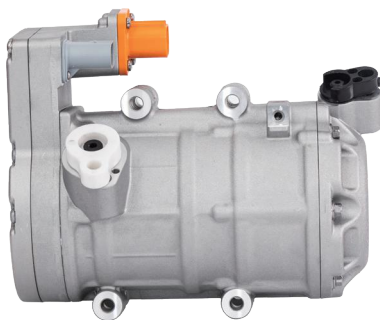
压缩机系列 Compressor series

EM45

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	45CC
额定电压 Rated voltage	350V/540V
常用转速范围 Common speed range	800~8500rpm
通信 Communication	CAN、LIN
工作温度 Operating temperature	-20°C~+85°C
储存温度 Storage temperature	-30°C~+105°C
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	8.6kg
防护等级 Protection rating	IP67



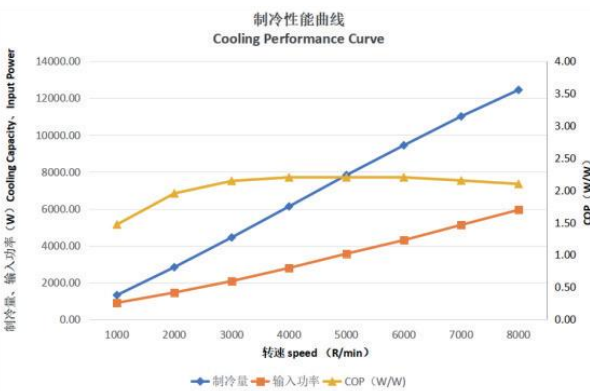
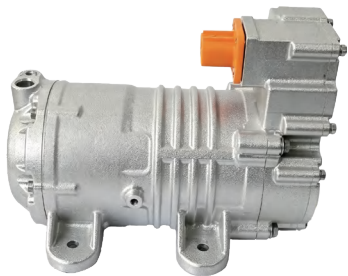
压缩机系列 Compressor series

GM55

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	55CC
额定电压 Rated voltage	350V/600V (根据客户需求开发)
常用转速范围 Common speed range	800~8600rpm
通信 Communication	CAN
工作温度 Operating temperature	-20°C~+85°C
储存温度 Storage temperature	-40~+120°C
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	9.2kg
防护等级 Protection rating	IP67



Electric Scroll Compressor

电动涡旋压缩机

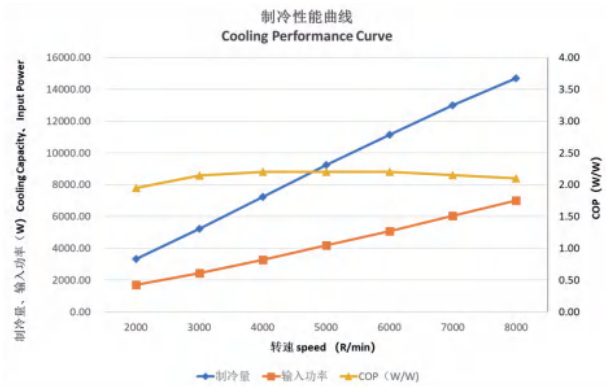
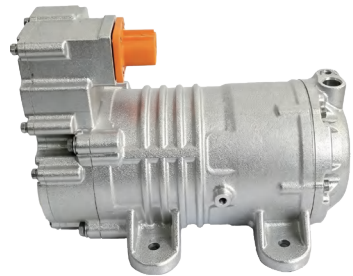
压缩机系列
Compressor series

GM63

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	63CC
额定电压 Rated voltage	600V
常用转速范围 Common speed range	800~8600rpm
通信 Communication	CAN
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	9.4kg
防护等级 Protection rating	IP67



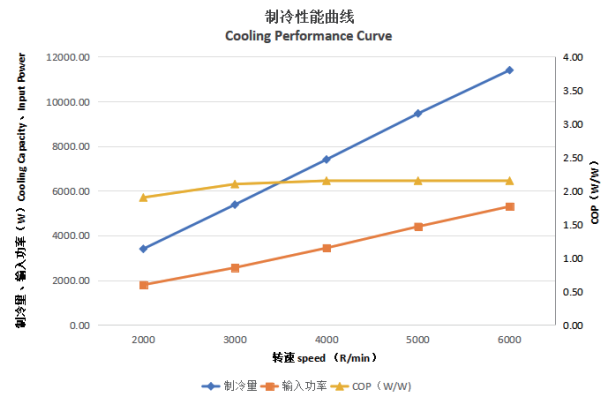
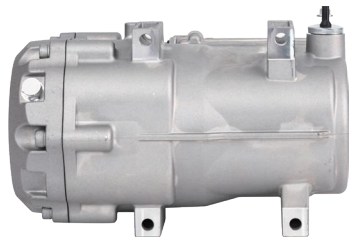
压缩机系列
Compressor series

CM66

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf
排量 Displacement	66CC
额定电压 Rated voltage	312V/540V/800V
常用转速范围 Common speed range	2000~6000rpm
通信 Communication	CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-30℃~+105℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	8.7kg
防护等级 Protection rating	IP67



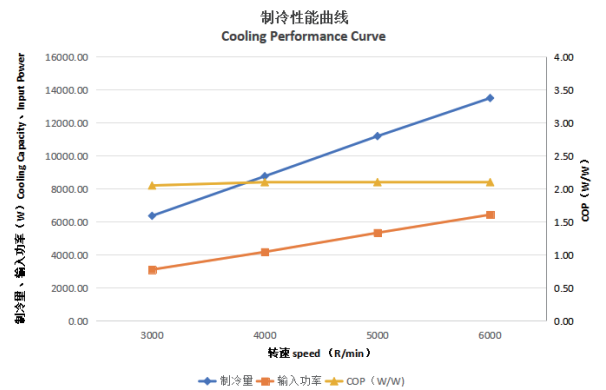
压缩机系列
Compressor series

BM80

压缩机参数

Compressor parameters

冷媒 Refrigerant	R134a/R1234yf/R407C
排量 Displacement	80CC
额定电压 Rated voltage	540V/850V
常用转速范围 Common speed range	1000~6000rpm
通信 Communication	CAN、PWM、Gear
工作温度 Operating temperature	-20℃~+85℃
储存温度 Storage temperature	-40℃~+120℃
冷冻油 Refrigerant oil	POE
冷却方式 Cooling method	吸气冷却/Suction cooling
压缩机重量 Compressor weight	17.5kg
防护等级 Protection rating	IP67



应用领域

APPLICATION FIELDS



驻车空调系统
Roof-top AC



机械设备散热
Mechanical equipment cooling



冷藏车空调
Refrigerated Vehicle AC



大巴车空调
Bus AC



乘用车空调
Passenger Car AC



工程车空调
Engineering Vehicle AC

● 集成化控制器 INTEGRATED MULTI-FUNCTION CONTROLLER

控制器参数
Controller parameters

驱动电压 Drive Voltage	400V / 800V
控制电压 Control Voltage	8V-36V
可选功能 Optional Functions	集成化控制器包含热管理控制逻辑，PFC，压缩机驱动，风机驱动，水泵驱动，PTC加热等各执行零件控制，可根据客户不同要求做定制化开发。 Integrated controller embedded with thermal management logic, supporting control of PFC, compressor drive, fan drive, water pump drive, PTC heater and other actuators. Customized development available per customer requirements.



● 热管理控制器 THERMAL MANAGEMENT ECU

控制器参数
Controller parameters

驱动电压 Drive Voltage	8V-36V
通讯方式 Communication Interface	CAN/LIN
功能 Function	整车热管理控制系统，控制电池、电机、电控、空调系统、精准调节各个系统温度，实现能耗最优管理 Vehicle thermal management control system. Regulates temperatures of battery, motor, ECU and air conditioning systems precisely to achieve optimal energy consumption management.



● 二合一控制器 2-IN-1 INTEGRATED CONTROLLER

控制器参数
Controller parameters

驱动电压 Drive Voltage	280V~950V
控制电压 Control Voltage	8V-36V
保护措施 Protection Functions	电压、电流、温度、堵转、自检保护、温度、干烧等措施 Overvoltage, overcurrent, overtemperature, locked rotor, self-check, overheat and dry-burning protection
压缩机最大功率 Max. Compressor Power	10KW
PTC最大功率 Max. PTC Power	8KW，可选单温驱或双温区 8kW; single or dual temperature zone drive optional
通讯方式 Communication Interface	CAN/CANFD/LIN
可选功能 Optional Functions	网络安全/UDS诊断/BOOT/OTA Cybersecurity, UDS diagnosis, BOOT, OTA



● 压缩机控制器 COMPRESSOR CONTROLLER

控制器参数
Controller parameters

驱动电压 Drive Voltage	12V~950V
控制电压 Control Voltage	8V-36V
保护措施 Protection Functions	电压、电流、温度、堵转、自检保护等措施。 Overvoltage, overcurrent, overtemperature, locked rotor, self-check and other protection mechanisms
输入功率 Input Power	0.5-10KW
通讯方式 Communication Interface	CAN//CANFD/LIN
可选功能 Optional Functions	网络安全/UDS诊断/BOOT/OTA Cybersecurity, UDS diagnosis, BOOT, OTA



● 空气压缩机控制器 AIR COMPRESSOR CONTROLLER

控制器参数
Controller parameters

驱动电压 Drive Voltage	12V/24/48V/540V
通讯方式 Communication Interface	可选PWM/CAN/CANFD/LIN Optional PWM / CAN / CAN FD / LIN
功能 Function	驱动空压机电机运转，精准调速，提供稳定气源。 Drives air compressor motor with precise speed regulation to supply stable air source.



● 风机控制器 COOLING FAN CONTROLLER

控制器参数
Controller parameters

驱动电压 Drive Voltage	12V/24V/600V
控制电压 Control Voltage	8V-32V
输入功率 Input Power	0.3KW-5KW
通讯方式 Communication Interface	可选PWM、CAN、LIN、485通信 Optional PWM, CAN, LIN, RS485



● 储能热管理控制器

ENERGY STORAGE THERMAL MANAGEMENT CONTROLLER



型号 Model	ZLCN-303 HFN2-002	ZLCN-303 HFN2-002	ZLCN-305 HFN2-001	ZLCN-308 HFN2-001	ZLCN-325 HFN3-001	ZLCN-360 HFN3-001	ZLCN-380 HFN3-001
制冷量 Cooling Capacity	2KW	3KW	5KW	8KW	25KW	60KW	80KW
制热量 Heating Capacity	2KW	2KW	2KW	4KW	9KW	24KW	30KW
尺寸 (高×宽×深) Dimensions (H × W × D)	250×700 ×900	250×750 ×900	800×300 ×1050	1000×300 ×1200	700×1000 ×220	2400×1200 ×440	2400×1200 ×500
制冷剂 Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A	R410A
水流量 Water Flow Rate	30L/min @60kpa	30L/min @60kpa	50L/min @60kpa	72L/min @80kpa	300L/min @150kpa	500L/min @150kpa	600L/min @150kpa
额定功率 Rated Power	1.2KW	1.5KW	2.7KW	4.6KW	12.8KW	30KW	36KW
最大电流 Maximum Current	12.5A	19.2A	16A	25A	32A	65A	72A
结构形式 Structure Type	抽屉式 Draw-out	抽屉式 Draw-out	插框式 Plug-in Subrack	插框式 Plug-in Subrack	门装式 Door- mounted	门装式 Door- mounted	门装式 Door- mounted

● 车载热管理控制器

VEHICLE THERMAL MANAGEMENT CONTROLLER



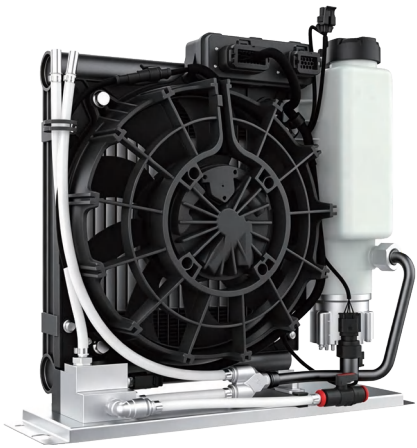
型号 Model	标配 Standard Configuration		选配 Optional Configuration			配置明细 Configuration Details
	ECU	DCAC	DCDC	PDU1	PDU2	
T380-AD6E1 P7-905-001	√	√	1.5KW	2路	1路	单路1.5KW DCDC+5.5KW~7.5KW 变频器+2路接触器+1路高压保险 Single-channel 1.5kW DCDC + 5.5kW~7.5kW Inverter + 2 Channels of Contactors + 1 Channel High-Voltage Fuse
T380-AD7E1 P7-905-001	√	√	1KW	2路	1路	单路1KW DCDC+5.5KW~7.5KW 变频器+2路接触器+1路高压保险 Single-channel 1kW DCDC + 5.5kW~7.5kW Inverter + 2 Channels of Contactors + 1 Channel High-Voltage Fuse
T380-AD6E1 P7-A15-001	√	√	1.5KW	2路	1路	单路1.5KW DCDC+15KW 变频器+2路接触器+1路高压保险 Single-channel 1.5kW DCDC + 15kW Inverter + 2 Channels of Contactors + 1 Channel High-Voltage Fuse
T380-AD2E1 P9-907-001	√	√	3KW	1路	1路	单路3KW DCDC+7.5KW 变频器+1路接触器+1路高压保险 Single-channel 3kW DCDC + 7.5kW Inverter + 1 Channel Contactor + 1 Channel High-Voltage Fuse
T380-AE1 P9-905-001	√	√	×	1路	1路	5.5KW 变频器+1路接触器+1路高压保险 5.5kW Inverter + 1 Channel Contactor + 1 Channel High-Voltage Fuse
T380-AE1 P9-A15-001	√	√	×	1路	1路	15KW 变频器+1路接触器+1路高压保险 15kW Inverter + 1 Channel Contactor + 1 Channel High-Voltage Fuse
T380-AD6 P9-A11-001	√	√	×	1路	1路	11KW 变频器+1路接触器+1路高压保险 11kW Inverter + 1 Channel Contactor + 1 Channel High-Voltage Fuse

● 超充热管理系统

SUPERCHARGER THERMAL MANAGEMENT SYSTEM

产品参数
Product parameters

产品型号 Product Model	ZLSC-103CPN2-001
尺寸(mm) Dimensions (mm)	W400*H400*D130mm
散热功率 Cooling Power	3000W@5L/min, 1000m³/h, 50°C _{Tamb}
冷却介质 Coolant Medium	10cst 二甲基硅油/50%纯水+丙二醇 10cst Dimethyl Silicone Oil / 50% Deionized Water + Propylene Glycol
工作电流 (枪线) Operating Current (Cable)	300~550A
环境温度范围 Ambient Temperature Range	-40~50°C
通讯方式 Communication Protocol	RS485/Modbus
整机功耗 Total Power Consumption	< 300W
重量 Weight	15kg
系统容积 System Fluid Volume	2.5~3L
接头规格 Connector Size	φ10*8mm



● 应用领域

APPLICATION FIELDS



储能热管理控制器
ENERGY STORAGE THERMAL MANAGEMENT CONTROLLER



车载热管理控制器
VEHICLE THERMAL MANAGEMENT CONTROLLER



超充热管理系统
SUPERCHARGER THERMAL MANAGEMENT SYSTEM



CDU假负载系统
CDU (COOLANT DISTRIBUTION UNIT) DUMMY LOAD SYSTEM



超越期待 引领行业 创新未来

