

GRELEC
INTERNATIONAL

領先電氣製造商

10-600A/12-1500Vdc

GR HVDC RELAY

高压直流继电器

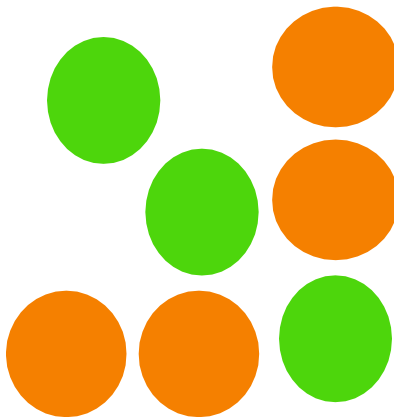
选型 指南



Professional manufacturer of HVDC relay

高压直流继电器专业制造商

- . Smart Relay 智能继电器
- . Dc Relay Module 直流继电器模组
- . Automobile Relay 汽车继电器
- . HvdC Relay 高压直流继电器
- . Magnetic Latching Relay 磁保持继电器



www.grinternational.uk
info@grinternational.uk

GR Electric International Limited. Grelec International is the world's leading professional electrical product solution supplier. We provide offshore manufacturing expertise to reduce material procurement costs. Grelec's European and Asian storage facilities ensure on time delivery. Grelec has dedicated teams in the UK and China, To provide you with attractive international solutions. For superior service today contact us and learn how we can support you. www.grinternational.cn/

GRELEC OVERVIEW

Grelec provides standard product manufacturing, and can design and develop customized products according to customers' special requirements. We warmly welcome OEM and ODM to discuss cooperation. Our products cover automotive relays, HVDC contactors, HVDC relays, magnetic holding relays, power relays, transformers, PDU / BDU, DC Relay Module, electronic control modules, magnetic application devices, SmCo magnets, NdFeB magnets, AlNiCo magnets, ferrite magnets, rubber magnets, bonded NdFeB magnets, magnetic filters and various magnetic application components. Widely used in new energy, power, medical, lighting, electrical, industrial, military, automotive, construction machinery and HVAC industries. We have engineering expertise in modifying standards and customizing products.

ENGINEERING

Grelec's Global design team offers comprehensive technical support. We collaborate with our clients to understand design requirements and determine the most innovative cost solution available. Grelec utilizes the latest CAD technologies available in designing our products.

DELIVERY & WAREHOUSING

Grelec's global inventory facilities in the UK and China provide the shortest lead time on the market. We work with our customers to maintain existing inventory levels to meet demand fluctuations.

QUALITY

All our production equipment has passed the ISO 9001, TS16949 system certification. Each product has been tested by advanced automation system. Greco's robust design verification and quality inspection procedures ensure that products meet customer requirements.

Grelec International 为全球领先的专业电气产品解决方案供应商。我们提供离岸制造专业知识，以降低材料采购成本。GR 欧洲和亚洲仓储设施确保准时交货。GR 在英国和中国设有专门的团队，为您提供极具吸引力的国际解决方案。

如需优质服务，请联系我们，了解我们如何为您提供支持。 www.grinternational.uk

GR 概述

GR 提供标准产品制造，还可根据客户特殊要求设计、研发定制特规品，热忱欢迎广大客商 OEM 与 ODM 洽谈合作。我们产品涵盖汽车继电器、高压直流继电器、高压直流继电器、磁保持继电器、功率继电器、互感器、车载高压配电单元 PDU/BDU、电控模组、直流继电器模组、磁应用器件、钕钴磁铁、钕铁硼磁铁、铝镍钴磁铁、铁氧体磁铁、橡塑磁、粘结钕铁硼、磁性过滤器和各种磁性应用组件。广泛应用于新能源、电力、医疗、照明、电器、工业、军事、汽车、工程机械和暖通空调等行业。我们在修改标准和定制产品方面拥有专门的工程专业知识。

GR 工程

GR 的全球设计团队提供全面的技术支持。我们与客户合作，以了解设计要求并确定更具创新性的成本解决方案。GR 利用最新的 CAD 技术设计我们的产品。

GR 交期&仓储

GR 在英国和中国的全球库存设施提供了市场上最短的交货期。我们与客户合作，保持现有库存水平，以满足需求波动。

GR 质量

我们所有的生产设备都通过了 ISO 9001、TS16949 体系认证。每种产品都经过先进的自动化系统测试。GR 稳健的设计验证和质量检验程序确保产品符合客户要求。

Product line 产品系列	901 GEV10	903 GEV30	905 GEV50	908 GEV100	909 GEV135
Picture 图片					
contact form 触点形式	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开
load current 负载电流	10 A	30 A	50 A	100 A	135 A
Load voltage 负载电压	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc
Dielectric Strength介质耐压 Between contacts触点间	2500Vac 60sec.10ma	2500Vac 60sec.10ma	2500Vac 60sec.10ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma
Dielectric Strength介质耐压 Contact to coil触点与线圈间	2500Vac 60sec.10ma	2500Vac 60sec.10ma	2500Vac 60sec.10ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma
pull-in voltage 吸合电压	75% Max.	75% Max.	75% Max.	75% Max.	75% Max.
Release the voltage 释放电压	8% Min.	8% Min.	8% Min.	8% Min.	8% Min.
Pull in time 吸合时间	25 ms	25 ms	25 ms	25 ms	25 ms
Release time 释放时间	10 ms	10 ms	10 ms	10 ms	10 ms
Coil power 线圈功率	3.5w	3.5w	3.5w	5.5-6w	5.5-6w
Auxiliary contact 辅助触点	No	No	No	Yes	Yes
Electrical durability 电耐久性	50,000	20,000	15,000	10,000	10,000
Mechanical durability 机械耐久性	300,000	300,000	300,000	300,000	200,000
Contact internal resistance 触点内阻	Max.10	Max.5	Max.5	Max.1	Max.1
Vibration 振动	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz
humidity 湿度	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
Ambient temperature 环境温度	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight 重量	130g	135g	135g	190g	190g
Dimensions 外形尺寸	52x34x52mm	52x34x52mm	52x34x52mm	55.3x39.8x58mm	55.3x39.8x58mm

Product line 产品系列	910 GEV150	911 GEV200	912 GEV250	913 GEV300	914 GEV350
Picture 图片					
contact form 触点形式	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开
load current 负载电流	150 A	200 A	250 A	300 A	350 A
Load voltage 负载电压	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc
Dielectric Strength介质耐压 Between contacts触点间	3500Vac 60sec.10ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma	4500Vac 60sec.
Dielectric Strength介质耐压 Contact to coil触点与线圈间	3500Vac 60sec.10ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma	3500Vac 60sec.5ma	4500Vac 60sec.
pull-in voltage 吸合电压	75% Max.	75% Max.	75% Max.	75% Max.	75% Max.
Release the voltage 释放电压	10% Min.	10% Min.	10% Min.	10% Min.	10% Min.
Pull in time 吸合时间	30 ms	30 ms	30 ms	30 ms	50 ms
Release time 释放时间	10 ms	10 ms	10 ms	10 ms	10 ms
Coil power 线圈功率	5.5-6w	3-3.5w	3-3.5w	3-3.5w	4w
Auxiliary contact 辅助触点	Yes	Yes	Yes	Yes	Yes
Electrical durability 电耐久性	10,000	10,000	10,000	2,000	8,000
Mechanical durability 机械耐久性	200,000	200,000	200,000	200,000	200,000
Contact internal resistance 触点内阻	Max.1	Max.0.5	Max.0.5	Max.0.5	Max.0.4
Vibration 振动	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz
humidity 湿度	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
Ambient temperature 环境温度	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight 重量	310g	400g	400g	400g	1090g
Dimensions 外形尺寸	69x47x63mm	80.3x65.5x73.4mm	80.3x65.5x73.4mm	80.3x65.5x73.4mm	88x80x97.2mm

Product line 产品系列	915 GEV400	916 GEV500	917 GEV600	801 GEV10T	802 GEV20T
Picture 图片					
contact form 触点形式	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开
load current 负载电流	400 A	500 A	600 A	10 A	20 A
Load voltage 负载电压	12-1000Vdc 12-1500Vdc	12-1000Vdc 12-1500Vdc	12-1000Vdc	12-750Vdc	12-750Vdc
Dielectric Strength介质耐压 Between contacts触点间	4500Vac 60sec.	4500Vac 60sec.	4500Vac 60sec.	2500Vac 60sec.10ma	2500Vac 60sec.10ma
Dielectric Strength介质耐压 Contact to coil触点与线圈间	4500Vac 60sec.	4500Vac 60sec.	4500Vac 60sec.	2500Vac 60sec.10ma	2500Vac 60sec.10ma
pull-in voltage 吸合电压	75% Max.	75% Max.	75% Max.	75% Max.	75% Max.
Release the voltage 释放电压	10% Min.	10% Min.	10% Min.	8% Min.	8% Min.
Pull in time 吸合时间	50 ms	50 ms	50 ms	25 ms	25 ms
Release time 释放时间	10 ms	10 ms	10 ms	10 ms	10 ms
Coil power 线圈功率	4w	4w	4w	1.6 w	1.6w
Auxiliary contact 辅助触点	Yes	Yes	Yes	No	No
Electrical durability 电耐久性	6,000	6,000	3,000	10,000	10,000
Mechanical durability 机械耐久性	200,000	200,000	200,000	1,000,000	1,000,000
Contact internal resistance 触点内阻	Max.0.4	Max.0.4	Max.0.4	Max.5	Max.5
Vibration 振动	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz
humidity 湿度	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
Ambient temperature 环境温度	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight 重量	1090g	1100g	1100g	60g	60g
Dimensions 外形尺寸	88x80x97.2mm	88x80x97.2mm	88x80x97.2mm	61.8x30x42.7mm	61.8x30x42.7mm

Product line 产品系列	807 GEV80T	808 GEV100T	809 GEV120T	810 GEV150T	811 GEV175T
Picture 图片					
contact form 触点形式	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开
load current 负载电流	80 A	100 A	120 A	150 A	175 A
Load voltage 负载电压	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc
Dielectric Strength介质耐压 Between contacts触点间	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma
Dielectric Strength介质耐压 Contact to coil触点与线圈间	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma
pull-in voltage 吸合电压	75% Max.	75% Max.	75% Max.	75% Max.	75% Max.
Release the voltage 释放电压	8% Min.	8% Min.	8% Min.	8% Min.	10% Min.
Pull in time 吸合时间	30 ms	30 ms	30 ms	30 ms	30 ms
Release time 释放时间	10 ms	10 ms	10 ms	10 ms	10 ms
Coil power 线圈功率	4.5w	4.5w	4.5w	6w	start-up: 34w keep: 3.9w
Auxiliary contact 辅助触点	No	No	No	No	No
Electrical durability 电耐久性	1,000	1,000	1,000	1,000	1,000
Mechanical durability 机械耐久性	200,000	200,000	200,000	200,000	200,000
Contact internal resistance 触点内阻	Max.1	Max.1	Max.1	Max.1	Max.0.5
Vibration 振动	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz
humidity 湿度	5% to 85%	5% to 85%	5% to 85%	5% to 85%	5% to 85%
Ambient temperature 环境温度	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight 重量	340g	340g	350g	350g	450g
Dimensions 外形尺寸	76.5x39x70mm	76.5x39x70mm	76.5x39x70mm	76.5x39x70mm	88.8x45x83.6mm

Product line 产品系列	812 GEV200T	813 GEV250T	814 GEV300T	815 GEV350T	816 GEV400T
Picture 图片					
contact form 触点形式	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开	SPST-NO 单刀单掷,常开
load current 负载电流	200 A	250 A	300 A	350 A	400 A
Load voltage 负载电压	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc	12-1000Vdc
Dielectric Strength介质耐压 Between contacts触点间	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma	4000Vac 60sec.10ma
Dielectric Strength介质耐压 Contact to coil触点与线圈间	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma	3000Vac 60sec.10ma
pull-in voltage 吸合电压	75% Max.	75% Max.	75% Max.	75% Max.	75% Max.
Release the voltage 释放电压	10% Min.	10% Min.	10% Min.	10% Min.	10% Min.
Pull in time 吸合时间	30 ms	30 ms	30 ms	30 ms	30 ms
Release time 释放时间	10 ms	10 ms	10 ms	10 ms	10 ms
Coil power 线圈功率	start-up: 34w keep: 3.9w	start-up: 34w keep: 3.9w	start-up: 34w keep: 3.9w	start-up: 45w keep: 3.8w	start-up: 45w keep: 3.8w
Auxiliary contact 辅助触点	No	No	No	No	No
Electrical durability 电耐久性	1,000	1,000	1,000	1,000	1,000
Mechanical durability 机械耐久性	200,000	200,000	200,000	200,000	200,000
Contact internal resistance 触点内阻	Max.0.5	Max.0.5	Max.1	Max.1	Max.1
Vibration 振动	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz	5G 10-500Hz
humidity 湿度	5% to 85%	5% to 85%	5% to 85%	5% to 85%	5% to 85%
Ambient temperature 环境温度	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight 重量	480g	480g	480g	810g	810g
Dimensions 外形尺寸	88.8x45x83.6mm	88.8x45x83.6mm	88.8x45x83.6mm	112.2x64.7x78.7mm	112.2x64.7x78.7mm

GR ELECTRIC EV RELAY NOTE

GR 高压继电器产品注意事项

Please refer to the general catalog for technical terms and specific cautions for use

请参阅技术规格书和具体注意事项

1. Pick-up and drop-out voltages should be adjusted to the ambient conditions and temperature for the application of your product.

吸合电压和释放电压可能会随着环境温度和使用条件而发生变化，因此在使用产品时敬请注意。

2. The repeated turn-off of the coil (during inrush time or in high coil current) when a Contactor is powered may cause damage to the Contactor (built-in electric circuit block). So the coil should not be turned off during the process of inrush.

当继电器带电时，线圈（在励磁涌流或高线圈电流）上的重复关闭，可能会造成继电器损坏（内置节能电路板产品）。所以线圈不应浪涌的过程中被关闭。

3. Lifetime is specified under the standard test conditions (temperature 15°C to 35°C, humidity 25 to 86%RH) and is determined according to load type, operation frequency, coil driving circuit, and ambient conditions. Also note that contact terminals have polarity.

关于开闭寿命在温度在15°C-35°C，湿温相对湿度在25%~86%下是确定的，还取决于它的负载类型和操作频率。线圈驱动电路和周围的环境条件。还要注意到终端有无极性。因此连接线圈和触点时应按接线图操作。带节能板的品种装有一个反向浪涌吸收电路，因此不必再使用浪涌保护器，我们建议不带节能板的品种安装压敏电阻作为浪涌保护器，应避免采用二极管，因为这会降低产品的切断能力。

4. The Contactor that hits a hard surface may be disabled.

当继电器撞到一个坚硬的表面后不得使用。

5. The slow escalation of the coil voltage may cause the relay unable to be turned on.

在进行动作电压测试或检验时，不能逐渐增加线圈电压方式加电，而应以阶跃信号加电，否则可能会导致继电器无法动作或参数超差情况。

6. Therefore allow coil the voltage quickly. After the product is connected, about 0.1 seconds, the coil starts automatically switch, do not repeat the shutdown in that position, which may damage the contact

避免它的交叉连接，可能导致故障或者过热。产品接通后，约0.1秒钟后，线圈开始自动切换，不要在那个位置重复关断，这样做可能会损坏继电器

7. Avoid the cross-connection for it may cause malfunctioning or overheating. When the screw and nut are tightened to the fixed Contactor housing or main circuit terminal, it should be used within the range of torque specified in the catalog; Also Use the bus bar or wire appropriate to the specific current.

为了避免交叉连接可能会引起故障或过热，当螺丝和螺母拧紧到固定继电器或主电路，应该参照目录中规定的扭矩范围内使用；此外，母线和特定的电流如下：

10A type: min. 2.0 mm²以上

30A type: min. 6.0 mm²以上

50A type: min. 15.0 mm²以上

100A type: min. 35 mm²以上

150A type: min. 50 mm²以上

200A type: min. 95 mm²以上

250A type: min. 120 mm²以上

350A type: min. 185 mm²以上

400A type: min. 240 mm²以上

各个部位的螺钉锁紧扭矩请控制在下述的规定范围内，在超过范围的情况下，可能会造成破损。

此外，安装方向不受限制。

继电器紧固件安装扭力

The locking torque of each part of the screw should be controlled within the following specified range.

In case of exceeding the range, it may cause damage.

In addition, the installation direction is not limited.

Installation torque of relay fastener

M4螺钉screw : 1.8Nm~2.7Nm

M5螺钉screw : 3Nm~4Nm

M5螺母screw : 3Nm~4Nm

M6螺母screw : 6Nm~8Nm

M8螺母screw : 10Nm~12Nm

8. If relays are closely mounted or placed close to a heat-generating object, carefully check the abnormal temperature rise and the distance of insulation between the terminals outside the relay, and keep the distance between relays to the minimum of 10mm.

如果继电器紧密安装或者放置接近发热物体时，请仔细检查异常升温 and 绝缘之间的距离。
如果是外置终端继电器，继电器之间的距离至少要有10毫米。

9. Be careful in handling the relay when using or storing it in a high temperature environment since the relay contacts are encapsulated in an inert atmosphere.

因为继电器触点被封装在一种惰性气体环境中，所以在高温条件下使用或者保管继电器应该小心放置。

10. If the nominal voltage and current are continuously applied to the coil and a relay is switched off and then on immediately, the coil temperature will rise, leading to the improvement of the relay coil resistance. This will make the pull-in voltage soar to surpass the nominal value. To avoid such situation, it is recommended to take precautions such as increasing load current, restricting time to apply voltage, applying high coil voltage and then nominal voltage, etc.

如果继电器的线圈和触点连续通以额定电压（或电流），电源被切断后又马上接通，此时由于线圈的温度增加，线圈的电阻会增大，从而使得产品的吸合电压升高，有可能导致超出额定吸合电压，在这种情况下，应采取以下措施：如降低负载电流，限制持续通电时间或采用比额定吸合电压高的线圈电压。为避免这种情况，要求采取预防措施，比如增加负载电流、约束电压使用时间、使用高电压线圈、额定电压等等。

11. In case of using a capacitive load (C-load), take precautions such as pre-charging to the capacitive load in order to prevent the inrush current from exceeding the rated current

万一使用容性负载，提前采取措施，比如对容性负载进行预充电以防止电流涌入超过额定电流。

12. In case of using an inductive load of $L/R \geq 1\text{ms}$, take precautions such as putting surge absorbers in parallel in order to avoid the shortening of electrical life or mis-contact-related problem

在使用 $L/R \geq 1$ 感性负载的情况下，应采取预防措施，如将浪涌吸收器和继电器并联以避免缩短电器寿命或MIS接触相关的问题

13. Avoid placing the product in a strong magnetic field (near the transformer or magnet), or near the object with heat radiation.

避免把产品安装在强磁场的地方（靠近变压器或磁铁处），或靠近有热辐射的物体。

14. The diffusion life of the internal gas is sealed by the sealing chamber. The diffusion life of the gas is determined by the temperature of the contact chamber (i.e., the ambient temperature and the contact point). Therefore, the ambient temperature is -40 to $+85$.

内部气体的扩散寿命 本继电器采用密封仓触点，仓内充有气体，气体的扩散寿命由触点仓内的温度（即环境温度 + 触点通电产生的温升）所决定，因此应确保环境温度为 -40 至 $+85^\circ\text{C}$ 。

15. GR Electric is Committed to Providing Defect-free Products, GR Elec International

will request the purchaser information about the product such as specification, final destination, application environment of final product, installation method, etc.

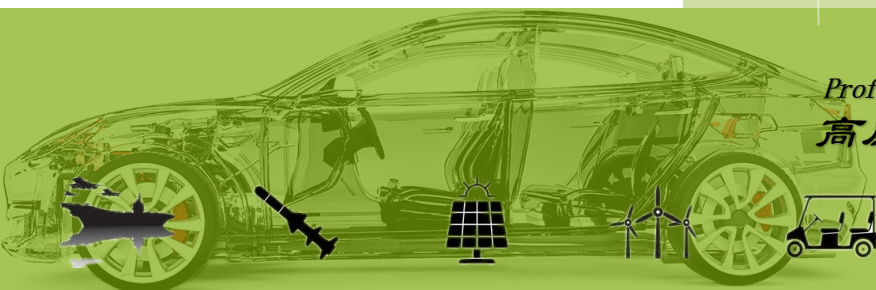
GR电气致力于提供最好的产品，它将会收集购买者的产品信息，比如：规格、使用目的、产品的使用环境、安装方法等等。

16. If the purchaser is concerned about the risks of personal injury, death or property damage in the process of installing and using the product, GR Electric will suggest the purchaser to be fully aware of the conditions and requirements stated in the specification and to take safety measures - for instance, double-circuit.

如果客户觉得安装和使用产品时会有受伤和死亡的危险，GR电气建议买家阅读说明书，仔细了解产品规格书要求的使用条件，适当地采取安全措施，比如：双回路电流切换



領先電氣製造商



Professional manufacturer of HVDC relay
高压直流继电器专业制造商



GR INTERNATIONAL LIMITED

www.grinternational.uk

info@grinternational.uk

Tel: +44 (0) 213 146 196

6 PROSPECT WAY UK NN11 8PL

China Office

www.grinternational.cn

GR electric shanghai co.,ltd.

Tel: +86-21-5770 9756

Building 6, Lane 208, Rongledong Road, Songjiang District, Shanghai

GR new energy tech shenzhen co.,ltd.

Tel: +86-755-2327 2653

building 4, Xili Qinyuan second road, Nanshan district, Shenzhen