

Overview

纲要

SmartGen parallel controller can help genset to ensure the reliability and continuity of power supply. It can automatic dispatch genset start/stop according to the load change and allocate loads to the gens. This function of controller can help users to reduce labor and fuel costs.

SmartGen并联控制器可以保证供电的可靠性、不间断性，并可以根据负载的变化自动调度发电机组的开机、停机，自动分配机组承担负载的大小；降低了人工成本，良好的控制了燃料的经济使用。

Solutions of SmartGen Parallel Controller:

1. Genset Multi-parallel
2. Single genset parallel with mains
3. Genset bus parallel with mains
4. Bus-bus parallel

SmartGen并联控制系统，提供了多种并联解决方案：

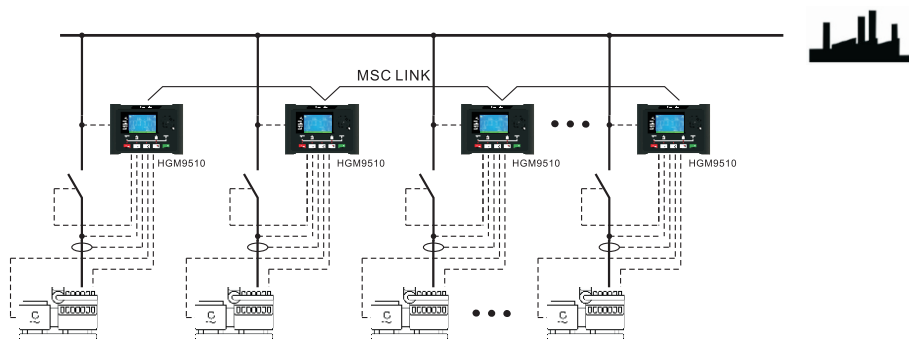
- 1、发电机组多机并联；
- 2、单台发电机组并联市电；
- 3、发电母排并联市电；
- 4、发电母排并联发电母排；

Application Solution

应用方案

Multi-parallel---HGM9510

发电机组多机并联---HGM9510



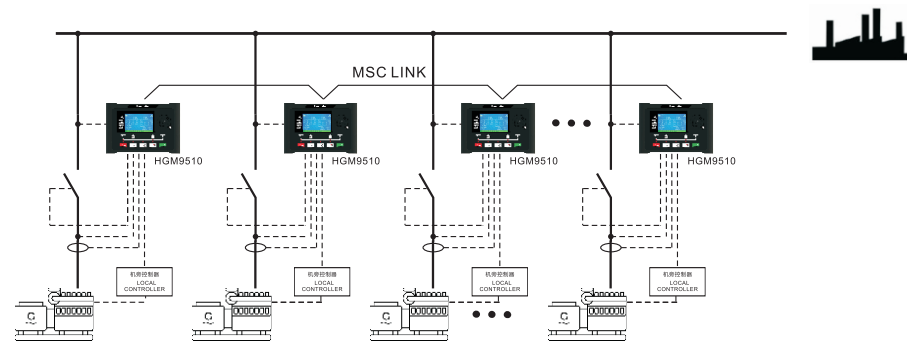
Multi-parallel: Help 32 gensets with same capacity/different capacity to realize automatic synchronization and load share.

发电机组多机并联：

可满足多达32台同容量或不同容量的机组自动同步和负载均分。

Power Management---HGM9510

功率管理---HGM9510

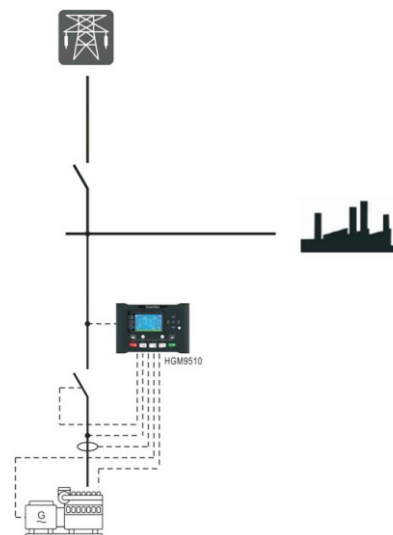


Power management: automatic synchronization and load share can be realized

功率管理：可实现自动同步和负载均分

Single Genset Parallel with mains---HGM9510

单机组并联市电---HGM9510

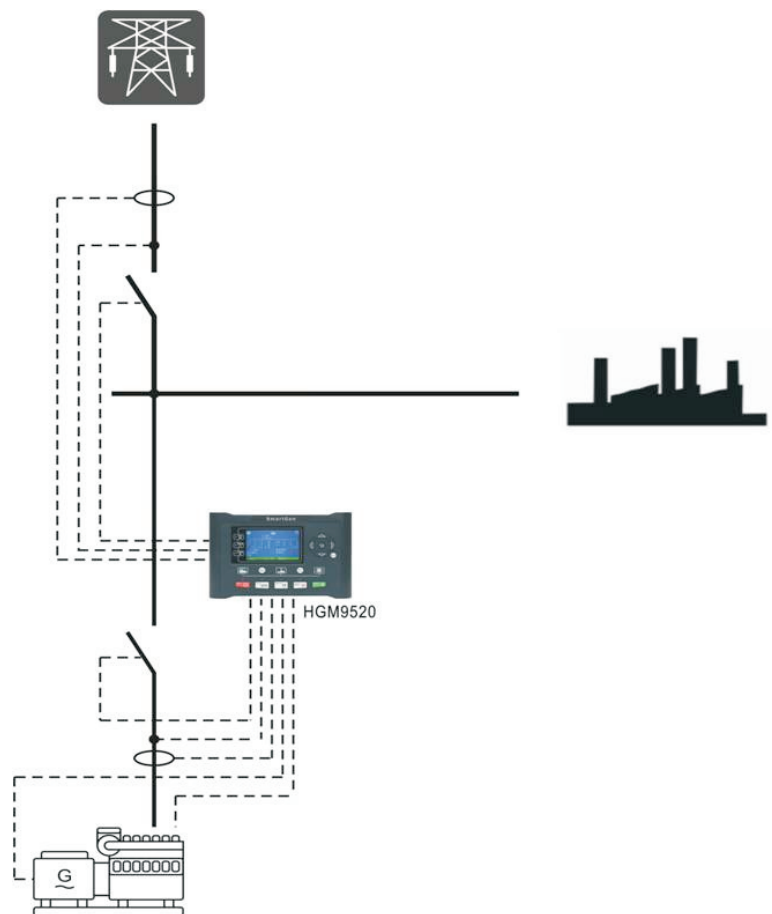


Single unit parallel with grid :
Single genset parallel with mains automatically/manually, and with constant power output function.

单机并网：
单台发电机组与市电的手动/自动并联且具有发电恒功率输出功能。

Single genset parallel with mains---HGM9520

单机组并联市电---HGM9520

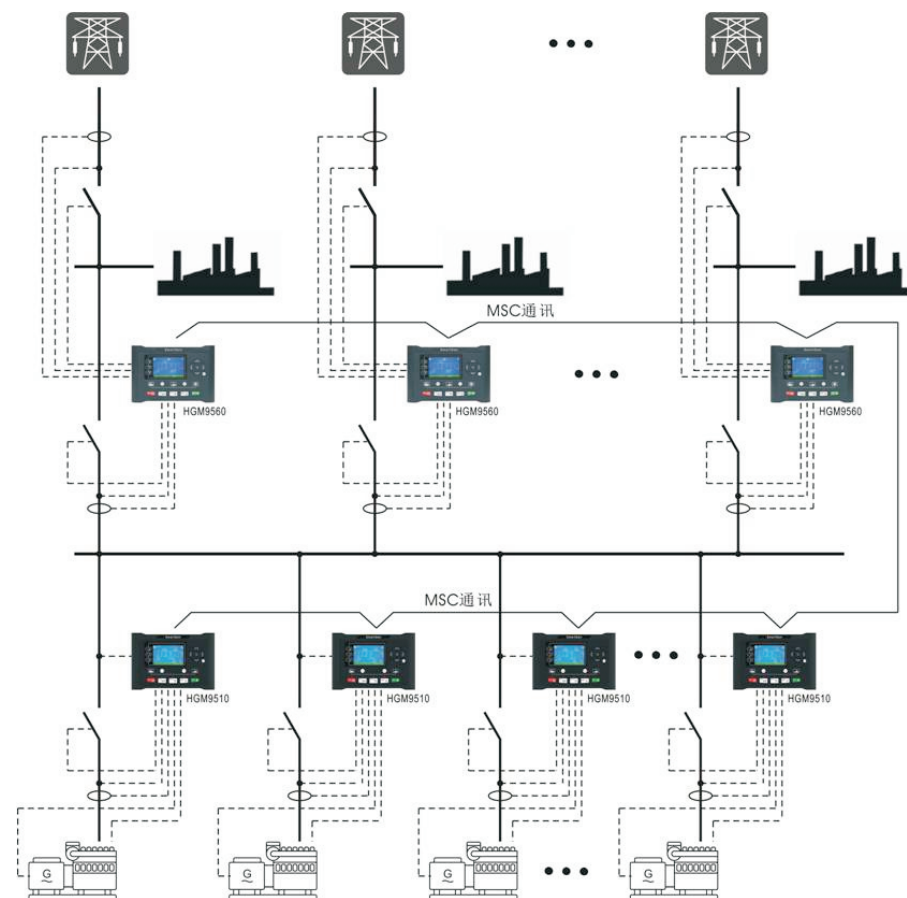


Single genset parallel with mains:
single genset parallel with mains automatically/manually, and with various parallel mode selection.

单台发电机组并联市电：
单台发电机组与市电的手动/自动并联，并具有多种与市电并联运行的模式可选择。

Multiple Gensets Parallel with Grid ---HGM9560

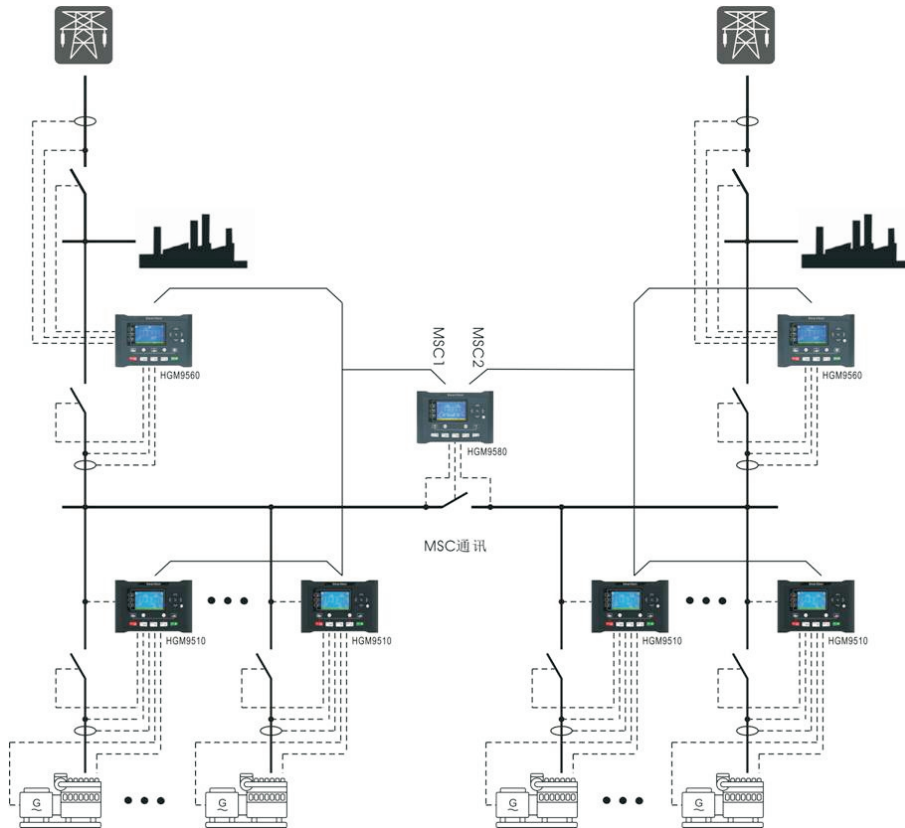
多机并网---HGM9560



Multi-units parallel with grid:
multiple gensets parallel with mains automatically/manually, and with various parallel operation mode selection.

多机并网：
多台发电机组与市电的手动/自动并联，具有多种与市电并联运行的模式可选择。

Bus-bus Parallel---HGM9580 母排与母排并联---HGM9580



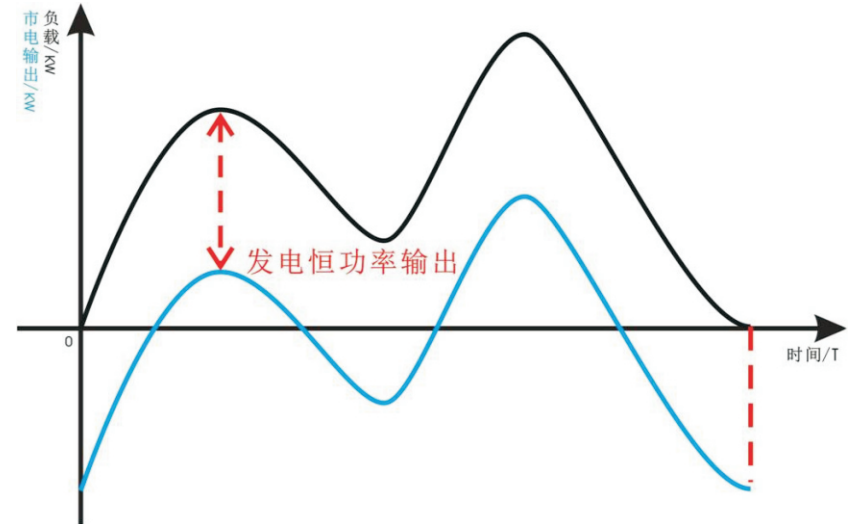
Bus-bus parallel: multiple gensets' bus parallel with multiple gensets' bus automatically or manually.

母排与母排并联：发电机组母排与发电机组母排的手动/自动并联。

Working Mode 工作模式

Electric Generation Constant Power Mode
---HGM9510、HGM9520、HGM9560

发电恒功率模式---HGM9510、HGM9520、HGM9560



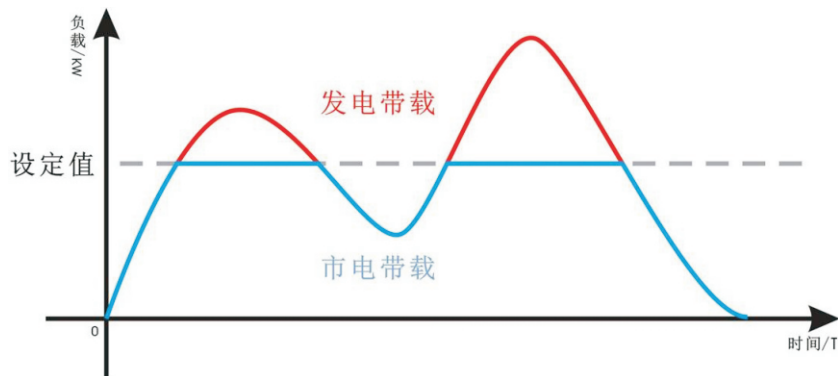
(Output to mains when the value of curve is negative)

(市电曲线为负值时，即为倒灌市电上)

Electric Generation Constant Power Mode: the output power is constant, redundant power output to mains if output power is greater than load demand; insufficient power is provided by mains if output power is less than load demand.

发电恒功率模式：发电输出功率恒定，当发电输出功率大于负载需求，多余的功率倒灌市电，当发电输出功率小于负载需求，不足的功率由市电提供。

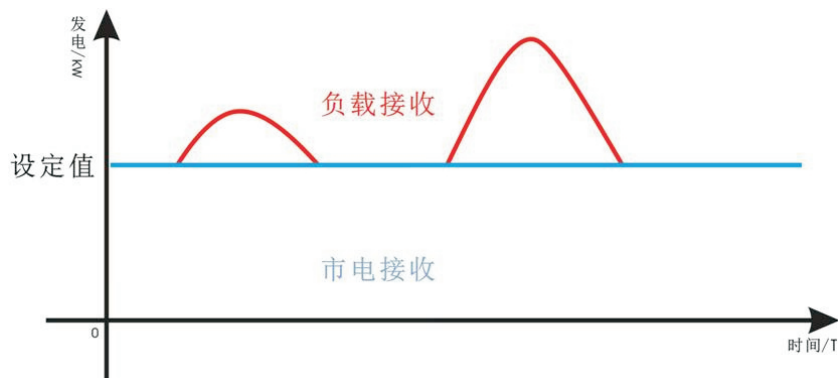
Mains peak clipping mode---HGM9520、HGM9560 市电剪峰模式---HGM9520、HGM9560



Mains peak clipping mode: setting the power value of mains on load, and the power that beyond setting value is provided by gensets.

市电剪峰模式：设定市电带载功率值，超出市电功率设定值的部分由发电带载。

Mains Reception Mode---HGM9520、HGM9560 市电接收模式---HGM9520、HGM9560



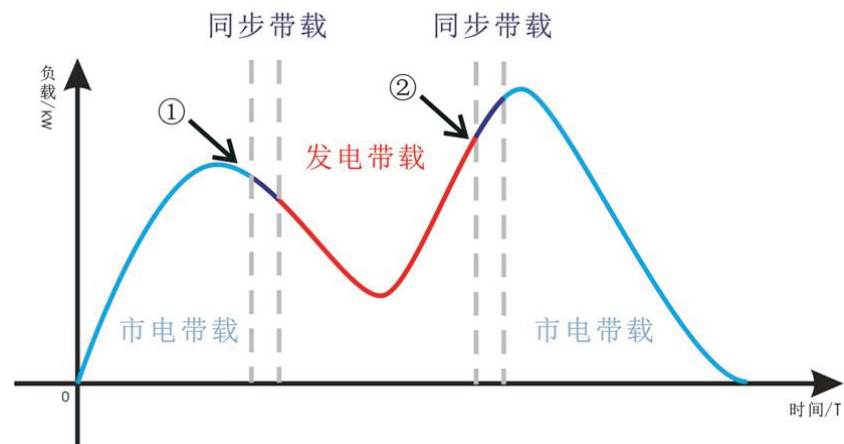
(Output to mains when the value of curve is negative)

(市电曲线为负值时，即为倒灌市电上)

Mains reception mode:
setting mains constant received power value, the genset output power is the sum of load demand and mains constant receiving power.

市电接收模式：
设定市电恒定接收功率值，发电输出功率是负载需求和市电恒定接收功率之和。

Load Reception Mode---HGM9520、HGM9560 负载接收模式---HGM9520、HGM9560



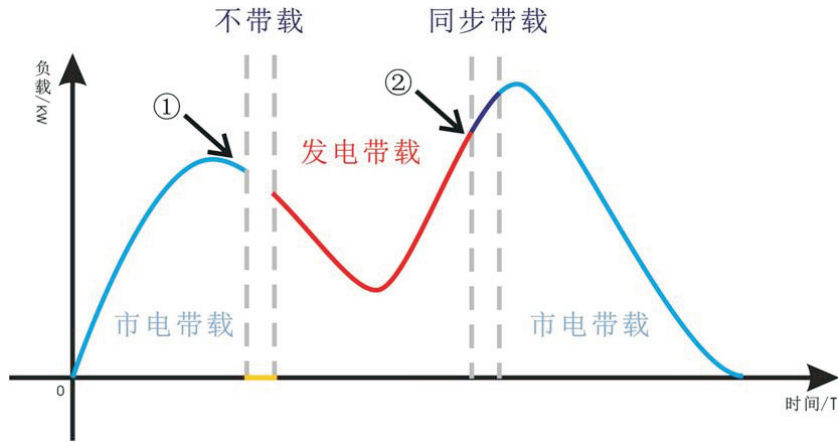
(①: Remote start on load input is active ②: Remote start on load input is reactive)

(①: 远程开机带载输入有效 ②: 远程开机带载输入无效)

Load reception mode: Power supply switchover between mains and gens based on the validity of input port of remote start on load.

负载接收模式：根据远程开机带载输入口的有效与否实现市电和发电供电切换

AMF mode---HGM9520、HGM9560 AMF模式---HGM9520、HGM9560

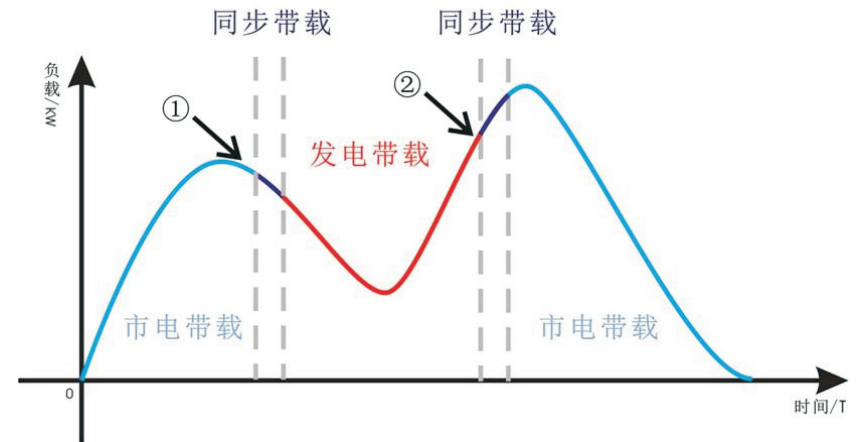


(①: Mains abnormal ②: Mains normal)
(①: 市电异常 ②: 市电正常)

AMF mode:
the genset start and supply power automatically when mains is abnormal;
the genset shutdown automatically and mains supply power when mains is normal.

AMF模式:
市电失效发电机组自动开机, 发电供电; 市电恢复正常, 发电反同步市电后, 负载转移到市电侧, 发电机组停机。

Island Mode---HGM9520、HGM9560 孤岛模式---HGM9520、HGM9560



(①: Remote start island input is valid
②: Remote start island input is invalid)
(①: 远程开机孤岛输入有效 ②: 远程开机孤岛输入无效)

Island reception mode:
Power supply switchover between mains and gens based on the validity of island input port of remote start .

孤岛接收模式:
根据远程开机孤岛输入口的有效与否实现市电和发电供电切换

Characteristics

产品特点



HGM9510

Characteristics:

1. Genset parallel with genset
2. Automatic synchronization and load power allocation
3. Configurable power management mode
4. Genset and bus controlling protection
5. GOV and AVR automatic adjustment
6. J1939 engine communication
7. USB programming interface
8. Remote monitoring via Modbus RS485
9. PLC(programmable logic control)
10. Uninterrupted power and cyclic starting up, it is fit to use in the field
11. Start/stop reserve set based on the data of automatic load detection
12. Controlling 32 gensets in parallel automatically in 1 minute
13. Single genset parallel in grid---genset constant power output

特点:

1. 机组与机组并联
2. 自动同步与负载功率分配
3. 可设置功率管理模式
4. 发电机组和母排控制保护
5. GOV和AVR自动调节
6. J1939发动机通讯
7. USB编程接口
8. 通过Modbus RS485实现远程监控
9. 可逻辑编程 (PLC)
10. 不断电循环开机, 适合野外作业
11. 自动检测负载大小来开启和关闭备用机组
12. 可控制32台机组1分钟全部自动并联
13. 单机并网模式---发电机组恒功率输出

Characteristics

产品特点



HGM9520

Characteristics:

1. Single genset parallel with mains
2. Automatic synchronization and load power allocation
3. Genset and mains controlling protection
4. GOV and AVR automatic adjustment
5. J1939 engine communication
6. USB programming interface
7. Remote monitoring via Modbus RS485
8. PLC(programmable logic control)
9. Genset constant power output
10. Mains controlling Mode
11. Load reception Mode
12. AMF controlling Mode
13. Islanding Mode

特点:

1. 单台机组与市电并联
2. 自动同步与负载功率分配
3. 发电机组与市电控制保护
4. GOV和AVR自动调节
5. J1939发动机通讯
6. USB编程接口
7. 通过Modbus RS485实现远程监控
8. 可逻辑编程 (PLC)
9. 发电机组恒功率输出
10. 市电控制模式选择
11. 负载接收模式选择
12. AMF控制模式选择
13. 孤岛模式选择

Characteristics 产品特点

Application Cases 应用案例

HGM9510

 HGM9560	 HGM9580
Characteristics: 1. Bus parallel with mains 2. Bus and mains controlling protection 3. Bus constant power output 4. Mains controlling Mode 5. Load reception Mode 6. AMF Mode 7. Islanding Mode 8. USB programming interface 9. Remote control via Modbus RS485	Characteristics: 1. Bus parallel with bus 2. USB programming interface 3. Remote monitoring via Modbus RS485 4. Configurable input/output port 5. Real-time clock & event log
特点: 1.发电母排与市电并联 2.发电母排与市电控制保护 3.发电母排恒功率输出 4.市电控制模式选择 5.负载接收模式选择 6.AMF模式选择 7.孤岛模式选择 8.USB编程接口 9.通过Modbus RS485实现远程监控	特点: 1.发电母排与发电母排并联 2.USB编程接口 3.通过Modbus RS485实现远程监控 4.可配置的输入/输出 5.实时时钟 & 历史记录



Ten 500KW generator sets were paralleled in Kashgar, Xinjiang, China

中国新疆喀什某工地，10台500KW发电机组并联



Two 500KW Perkins sewage gas gensets were paralleled

2台500KW帕金斯沼气机组并机



The total power for two gensets is 240KW, current genset's output is 100KW, and No. 2 is 140KW.

两台机组输出总功率是240KW，当前机组输出100KW，第二台机组输出140KW

One 100KW genset parallel with a 140KW genset
2台不同功率发电机组并联