

箱式外挂 ATS 使用手册

一. 功能简介:

ATS全自动应急发电机组是专为市电突然断电时的应急保安电源。当外电网突然断电时,该机组可以在2-6S内自行启动成功,并向用户的负载自行供电;当外电网恢复供电后,机组可自行将用户的负载切换到外电网上,同时自动停机。

该机组采用单片机作为控制核心,利用数字技术对机组状态进行全面管理监控,实现机组的全过程的自动化工作。机组主要用于雷达站,哨所,营房,邮电,金融,医院及在停电后需迅速供电的用户。

二. 操作步骤:

使用前准备:用电缆连接线把ATS与面板对接,并将面板上电门锁开关打到OFF档位置(只针对柴油机组,汽油机组请把电门锁打到ON档位置)。

自动档设置

(1) 将开关拨到“AUTO”档,面板“AUTO”灯亮,此时“ATS”操作系统已经处于自动检测状态。

(2) ATS的运行

当ATS系统进入自动状态后,如果市电因故暂停电,在2秒内启动发

电机马达,发电机正常暖机5秒后,系统自动将负载切换到发电机电源。

(3) ATS三次启动

当发电机因气温低或者其它原因导致发电机启动性能差,ATS控制系统将执行三次循环启动,其启动程序如下:

市电停→发电机第一次启动时间为5秒→启动不成功→停5秒→第二次启动时间为5秒→启动不成功停5秒→第三次启动时间为5秒(如果三次发电机都不能正常启动,报警灯“FAILURE”亮。

(4) 发电机停机

若机组在运行时,若市电恢复,且市电正常供电10秒钟,ATS控制系统将负载自动切换到市电,发电机在空载状态下运行5秒后停机。

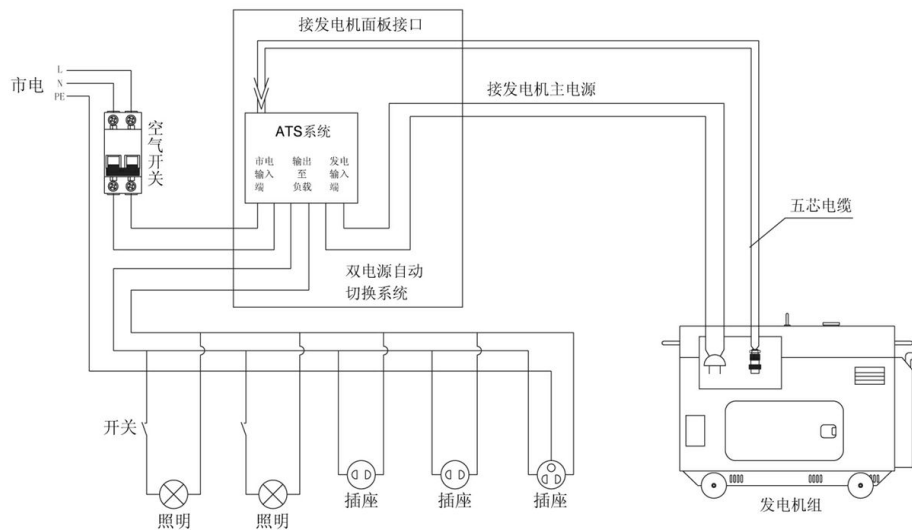
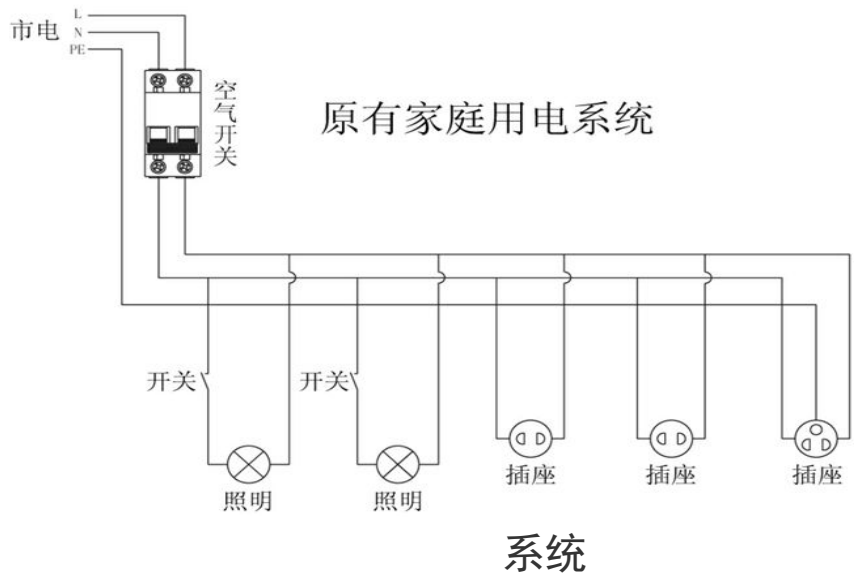
(5) ATS自动风门控制:

若机组带有风门装置,机组在启动时,ATS自动打开风门控制器,启动成功后,自动关闭风门装置。

三. 电瓶维护:

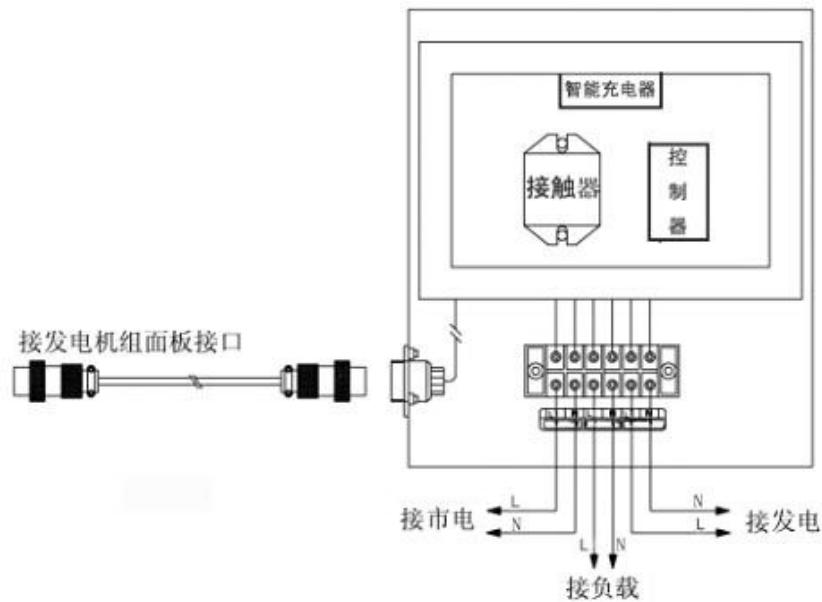
箱子内部设有对蓄电池恒流及浮充充电装置,在有市电状态下(电压110~250V),机组的内部充电机构均可对蓄电池恒流充电(充电电流1A),当蓄电池充满电后,充电器由恒流充电转变为浮冲充电,以补偿蓄电池内部电能的损失,确保蓄电池有充足的电能随时可以启动机组。

四. ATS接入用电系统示意图:

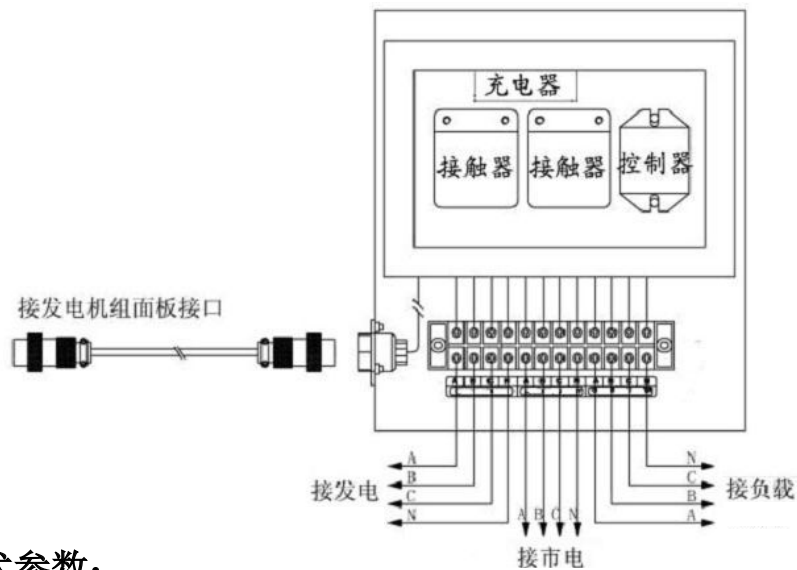


五. ATS 接线图:

1. 单相、单电压接线图:



2. 三相、双电压接线图:



六. 技术参数:

工作电压	DC 8~18V (超过 20V 过压保护)
接触器额定电流	单相: 220V/25A (5KW 机组) 单相: 220V/50A (10KW 机组) 三相: 380V/25A (5~10KW 机组)
内部充电器	输入电压: AC 110~250V 输出电压: DC 13.8V (±2%) 充电电流: 1A

外形尺寸 (mm)	250×140×320
电缆连接线	5 芯镀铬/柴油 8 芯镀铬/汽油
外连接线长度	标配 1.5m (可根据客户要求定制)
工作温度	(-25~60)°C
储藏条件	(-15~55)°C
内部线径	2.5mm ² (单相、三相 5KW 机组) 4mm ² (三相 10KW 机组) 6mm ² (单相 10KW 机组)

七. 注意事项

- 1、 选择ATS时，请选择相匹配的功率。
- 2、 ATS输出切勿与市电直接连接。
- 3、 市电接入ATS时，必须通过空气保护开关，已确保安全。
- 4、 请确认机组正常状态下使用自动ATS功能。
- 5、 注意要将发电机电门锁开关打到OFF档状态下使用（仅针对于柴油机组，汽油机组请将电门锁打到ON位置）；
- 6、 注意要将发电机面板空气开关至于“ON”位置。
- 7、 在ATS工作状态下，严禁机组启动后，把电瓶断开。
- 8、 设备必须放置在通风、干燥、避开高温、高湿度或者容易摇晃的地方。
- 9、 ATS 内部有高压，出现故障时必须请有资质的电气维修人员检查，普通用户请不要打开机壳，以防触电。

Box type external ATS manual

Function introduction:

ATS automatic emergency generator set is designed for emergency security power supply when the mains power is suddenly cut off. When the external power grid is suddenly cut off, the unit can start successfully within 2-6S and supply power to the user's load by itself; when the external power grid is restored, the unit can automatically switch the user's load to the external power grid and automatically shut down .

The unit uses a single-chip microcomputer as the control core, and uses digital technology to conduct comprehensive management and monitoring of the unit's status to realize the automation of the whole process of the unit. The unit is mainly used for radar stations, outposts, barracks, post and telecommunications, finance, hospitals and users who need rapid power supply after a power outage.

Steps:

Preparation before use: Connect the ATS to the panel with a cable connection, and turn the electric door lockswitch on the panel to the OFF position (only for diesel generators, and gasoline generators, please turn the electric door lock to ON).

Automatic gear setting

(1) Turn the switch to the "AUTO" position, the panel "AUTO" light is on, and the "ATS" operating system is already in the automatic detection state.

(2) Operation of ATS

When the ATS system enters the automatic state, if the mains power is suspended for some reason, the ATS automatically starts the generator motor within 2 seconds. After the generator warms up normally for 5 seconds, the system automatically switches the load to the generator power supply .

(3) ATS starts three times

When the generator has poor starting performance due to low temperature or other reasons, the ATS control system will execute three cycles to start, and the starting procedure is as follows:

Mains power failure → the first start time of the generator is 5 seconds → unsuccessful start → stop for 5 seconds → the second start time is 5 seconds → unsuccessful start and stop for 5 seconds → the third start time is 5 seconds (if three times None of the generators can start normally, and the warning light "FAILURE" is on.

(4) The generator is stopped

If the unit is running, if the utility power is restored and the utility power is normally supplied for 10 seconds, the ATS control system will automatically switch the load to the utility power, and the generator will stop after running for 5 seconds under no-load conditions.

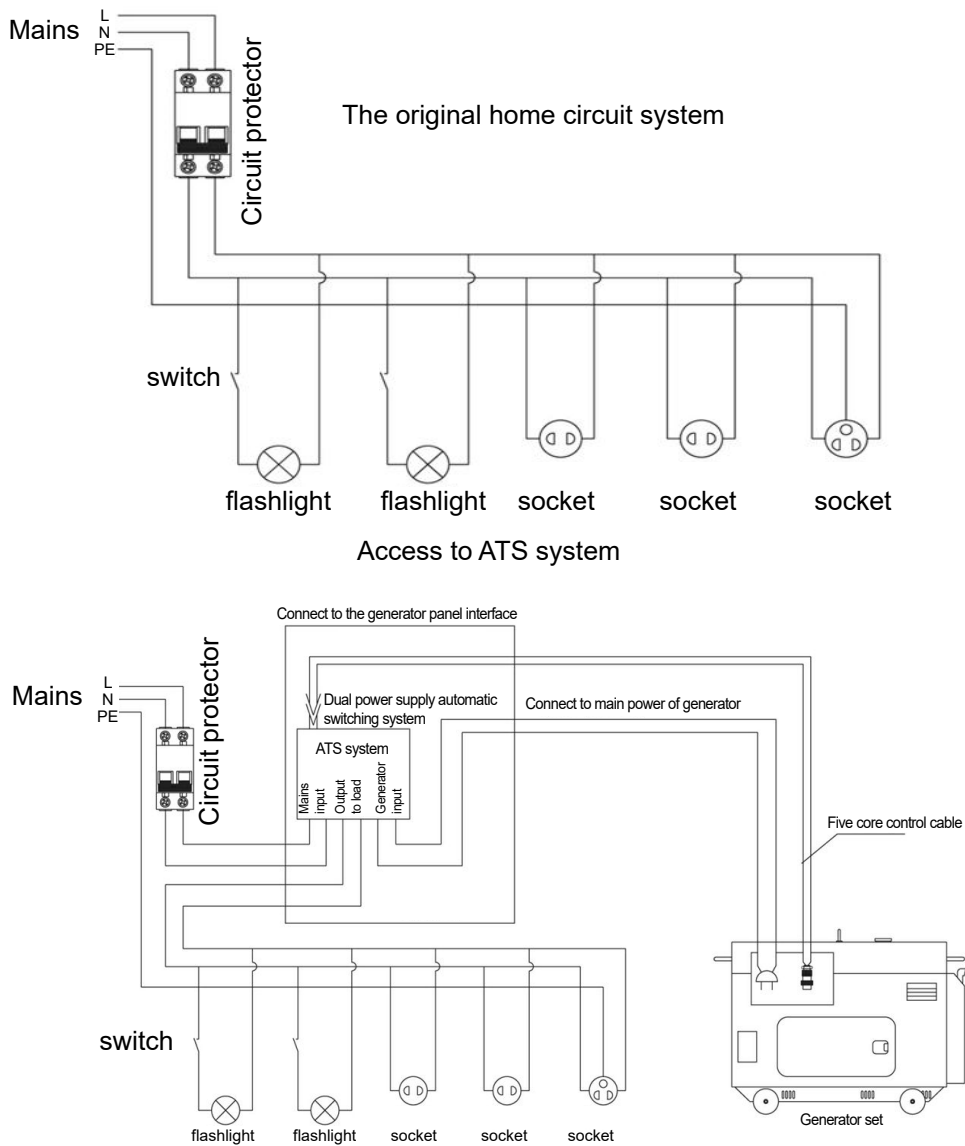
(5) ATS automatic choke:

If the unit is equipped with a choke device, when the unit is started, ATS will automatically open the choke, and after a successful start, the choke device will be off.

Battery maintenance:

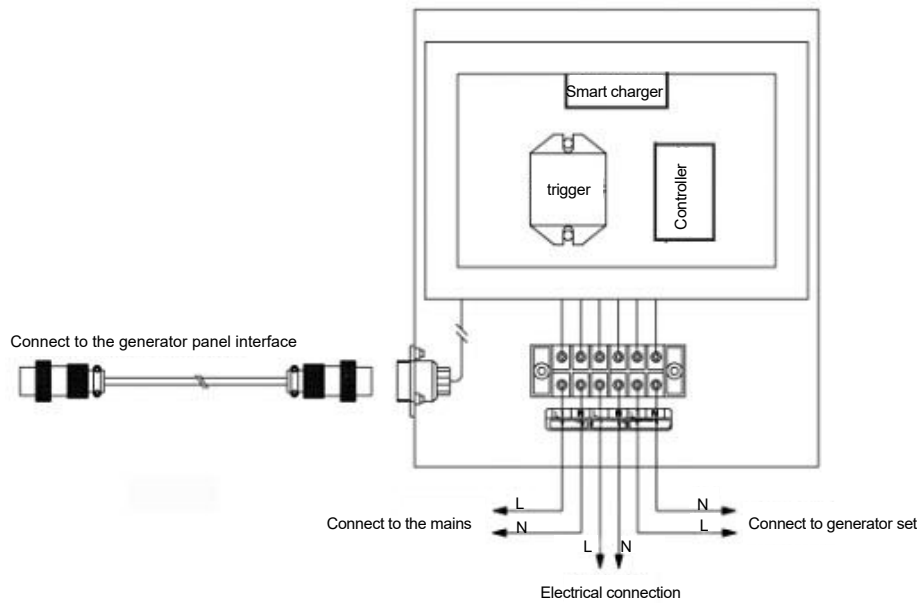
The box is equipped with a constant current and floating charging device for the battery. When there is city power (voltage 110 ~ 250V), the internal charging mechanism of the unit can charge the battery with constant current (charging current 1A). When the battery is fully charged, The charger changes from constant current charging to floating charging to compensate for the loss of internal electric energy of the battery and ensure that the battery has sufficient electric energy to start the unit at any time.

Schematic diagram of ATS access power system:

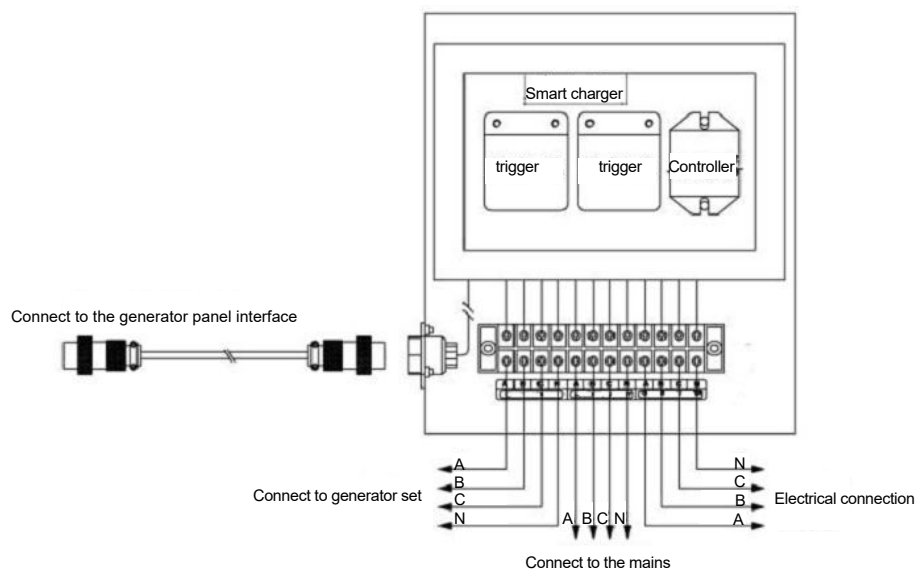


ATS wiring diagram:

1. Single-phase, single-voltage wiring diagram:



2. Three-phase, dual-voltage wiring diagram:



Technical parameters:

Working voltage	DC 8~18V (over 20V overvoltage protection)
Contactor rated current	Single phase: 220V/25A (5KW unit) Single phase: 220V/50A (10KW unit) Three-phase: 380V/25A (5~10KW unit)
Internal charger	Input voltage: AC 110~250V Output voltage: DC 13.8V ($\pm 2\%$) Charging current: 1A

Dimensions (mm)	250×140×320
Cable connection line	5-core chrome plated/diesel;8-core chrome/gasoline
The length of the external connection line	1.5m standard (can be customized according to customer requirements)
Working temperature	(-25~60)℃
Storage conditions	(-15~55)℃
Internal wire diameter	2.5mm ² (single-phase, three-phase 5KW unit) 4mm ² (three-phase 10KW unit) 6mm ² (single-phase 10KW unit)

Precautions

1. When choosing ATS, please select the matching power.
2. Do not directly connect the ATS output to the mains.
3. When the mains power is connected to the ATS, the circuit breaker protection must be used to ensure safety.
4. Please confirm that the automatic ATS function is used in the normal state of the unit.
5. Be careful to turn the generator electric door lock switch to OFF for use (only for diesel generators, gasoline generators, please turn the electric door lock to ON);
6. Pay attention to the circuit breaker on the generator panel to the "ON" position.
7. In the ATS working state, it is strictly prohibited to disconnect the battery after the unit is started.
8. The equipment must be placed in a ventilated, dry place, away from high temperature, high humidity or easy to shake.
9. There is high voltage inside the ATS. If a fault occurs, it must be checked by a qualified electrical maintenance person. Ordinary users should not open the case to prevent electric shock.