

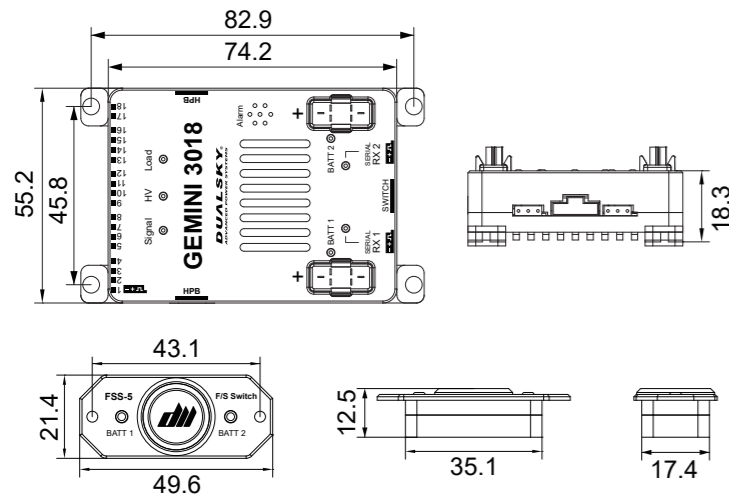
Gemini 3018 “双子星”

冗余电源模块 使用说明书

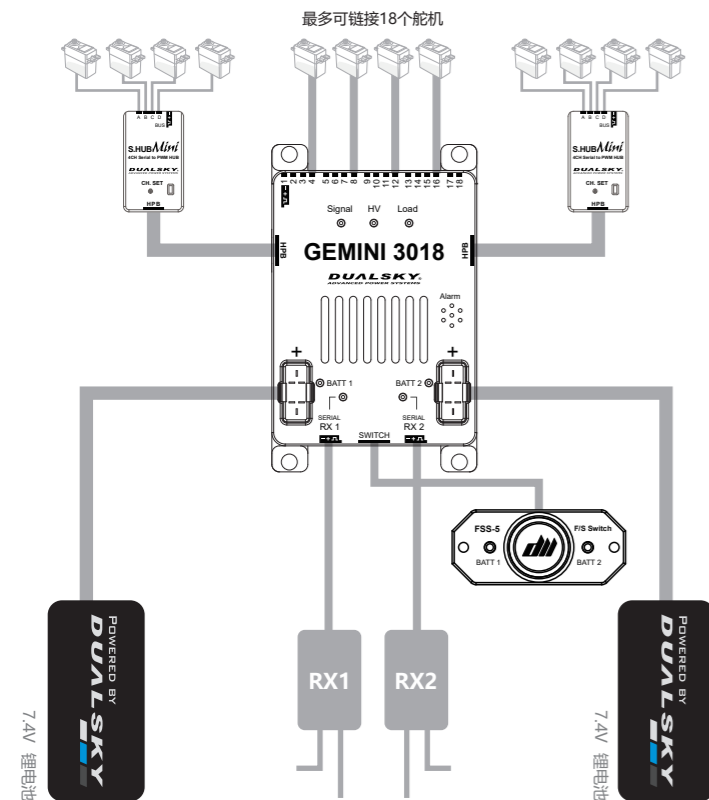
产品特点

- 双电池(2S, LIPO)冗余输入
- 高至30A的线性稳压输出能力
- 双路S.BUS1/2信号冗余输入
- 18通道PWM输出和2路HPB输出
- 与接收机自动同步输出刷新频率
- 配备全新FSS-5安全电子开关
- 支持高电压输出
- 全铝合金CNC外壳
- 适用于大型汽油机, 涡喷及无人机

产品尺寸



连线示意图



输入电源

- 双子星电源针对 7.4V 锂聚合物电池设计, 不建议采用其他类型的电源输入。
- 支持双电池输入, 冗余策略为: 谁电压高选择谁供电。
- 电池插口旁有 LED 指示。电量 100%-80%, LED 蓝色, 电量 50% 以上, LED 绿色, 电量 30% 以上, LED 黄色, 电量不足 30%, LED 红色
- 电池容量低于 10%, 蜂鸣器鸣叫, 一旦鸣叫, 关机前不会停止, 以便飞机降落引起飞行员注意。
- 双电池工作模式下, 有一块电池断开连接, 系统不间断工作, 同时触发 LED 和蜂鸣器报警, 本轮不恢复。
- 双子星也支持单电池工作模式,
- 电池与双子星连接后, 即便是关机状态也有毫安级耗电, 如果当日不再使用, 请断开电池与双子星的连接。
- 本体上的电池插口经常插拔有损坏风险, 建议采用转接线配件与电池相连。

信号源

- 双子星支持 SBUS1 或 SBUS2 串行总线输入协议, 最多支持 18 通道 PWM 输出。具体总线中包括多少通道, 请参考接收机说明书。
- 支持双信号源输入, 冗余策略为: RX1 为主接收机, RX2 为辅接收机, 当 RX1 信号质量异常或信号丢失时, 切换到 RX2, 当 RX1 恢复后, 切换回 RX1 的数据。
- 信号源有各自的 LED 指示。无信号, LED 灭。信号正常时, LED 常亮。信号不佳, LED 慢闪; 信号丢失又恢复 (例如, 线材接触问题), LED 快闪。
- 双接收机工作模式下, 一路信号丢失, 系统不间断工作, 同时触发蜂鸣器报警。
- 双子星也支持单接收机工作模式。
- 双子星给接收机提供的电压与输出相同, 请确保接收机可以在此电压下工作。
- 信号口的供电能力约为 3A, 可以接少量舵机或设备, 但不推荐。
- 不推荐不同型号的接收机混用 (例如 6208SB + 6108SB), 虽然这样可以工作。

开关

双子星配备专用的 FSS-5 电子开关, 长按 3 秒开机, 长按 3S 关机。开机后, 双子星本体会进行自检, 单电模式时, 蜂鸣器鸣叫一声, 双电模式时, 鸣叫两声。

开关具备 Fail Safe 功能, 损坏或脱离均不会导致本体断电。具备双电池状态 LED 指示, 与本体指示同步, 具体请参考之前章节。

舵机输出端口

双子星解码输出最多 18 个 PWM 通道, 其中 1-16CH 为比例通道, 17CH&18CH 对应 DG1 & DG2 开关通道。当使用的制式少于 18 通道时, 多余通道没有输出信号。

单一插口的最大峰值电流为 5A, 最大连续电流为 2.5A, 过大的电流会损坏输出通道。

输出端口的输出频率与 SBUS 帧数同步, 18 通道 FASST/FASSTest 模式时, 频率约为 70Hz, 12 通道 FASSTest 模式时, 频率 170Hz (此时只能用数字舵机)。

HPB (High Power Bus) 大功率总线输出

双子星本体两侧设置了两个 HPB 端口, 具有以下特点:

- 单个 HPB 端口具备 30A 的电流输出能力。
- 经过对通道数据的重新编码, HPB 输出 S.BUS1 总线信号。
- 可以直接连接 S.BUS1/S.BUS2 舵机, 也可以与 Dualsky S.HUB MINI 配套使用。

状态指示灯

双子星的输出端附近设置有 3 个指示灯, 如右图, 开机后, 具体说明如下:



• Signal 信号综合指示

当 RX1&RX2 信号都正常时亮蓝灯, 当一路信号差而发生切换信号源时亮绿灯; 有一路信号丢失时亮黄灯; 两路信号同时差, 亮红灯并触发报警, 该状态本轮保持。单接收机模式时, 初始黄灯。如果信号差, 红灯亮并报警, 该状态本轮保持。

• HV 高压输出指示

6.0V 灯灭; 6.6V & 7.4V 时灯亮, 此时注意要使用高压舵机、接收机及设备。

• Load 负载指示

反映主机内部温度, 初始蓝色, 高于 50 度绿色, 高于 70 度黄色, 高于 80 度红色并会触发蜂鸣器报警。

电压调节及电流输出能力

双子星采用线性稳压技术, 具有低纹波和高负载变化率等特点, 为遥控系统提供高达 30A 的“纯净”电流。电压调节设置在本体侧面, 在不同电压下, 双子星的电流输出能力如下:

7.4V 时 - 提供最大 30A 连续输出 (HV 指示灯亮)

6.6V 时 - 提供最大 20A 连续输出 (HV 指示灯亮)

6.0V 时 - 提供最大 15A 连续输出 (HV 指示灯熄灭)

数据回传

双子星为信号源接收机提供 3A 供电, RX1 主接收机如果具备回传功能, 可以直接接驳各类传感器。

双子星的稳压后电压也会自动回传, 不需要额外接线。建议遥控器上设一个回传电压报警, 以提高飞行安全。例如: 7.4V 稳压时, 遥控端设置 7.3V 报警提示。当电池电压大约降到 7.5V 以下时, 稳压输出不能维持 7.4V 输出, 会随电池电压减低而降低, 从而在飞行中触发遥控器报警。此时, 双子本体电源指示灯处于黄色区间。

固定

- 双子星本体有四个安装角, 采用螺丝与机体固定。
- 在强振动环境下使用时, 需要安装减震橡胶配件。
- 双子星本体上下壳体均参与散热, 不可以覆盖或与机体粘合。
- 开关设计为方便螺丝固定在机身外侧或设备板上。
- 本体和开关不防水。

免责声明

首先非常感谢您, 使用本产品。请严格按照手册使用本产品。我们不承担使用本产品或非法改装、操作不当产生的任何责任, 包括但不限于间接损失或连带责任, 最高赔偿不高于产品本身价格。一旦使用即代表您同意本声明的条款。

保修条例

双天电子类产品自售出之日起提供 12 个月的保修服务。如果您想在保修期内索赔, 请立即联系您的经销商。

模型店的收银台收据可证明货物是否在保修期内。请注意, 任何情况下保修期都不会延长。在保修期内, 任何功能缺陷、生产故障或材料缺陷都会免费提供保修服务。我们不会接受任何进一步索赔, 如间接损害货物返回时需自行承担运费, 我们将支付回程费用。运费未预付, 我们将不会接受货物。我们不接受运输造成的损害, 也不弥补运输损失。我们建议您投运输险, 将你的设备发送到服务中心。

满足以下条件, 我们才能处理您的索赔:

- 提供收银台收据
- 按说明书正确操作调速器
- 使用推荐的电源和配件
- 不是因为进水, 反极性, 重载而造成的损害
- 请提供一个简洁、准确的故障描述, 帮助我们解决问题

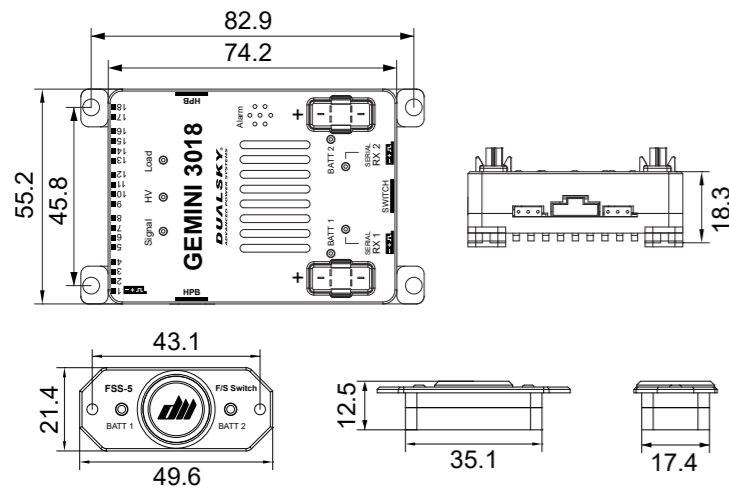
Gemini 3018

Redundant Power Supply Instruction Manual

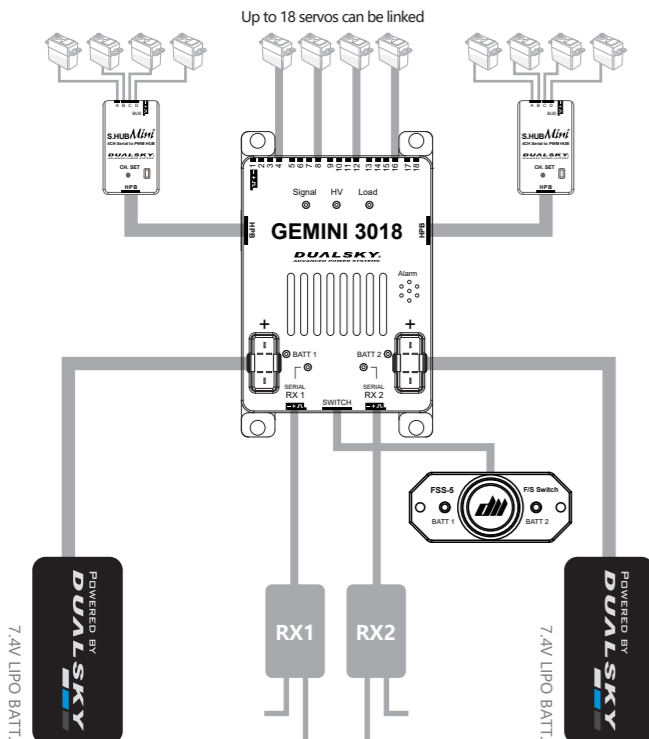
Product Features

- Dual battery (2S, LIPO) redundant input
- Linear regulated output capability up to 30A
- Dual S.BUS1/2 signal redundant input
- 18-channel PWM output and 2 HPB outputs
- Automatically synchronize output refresh rate with receiver
- Equipped with new FSS-5 fail safe electronic switch
- Supports high voltage output
- All aluminum alloy CNC housing
- Suitable for large gasoline models, jets and drones

Dimensions



Wiring Diagram



Power source

- Gemini power supply is designed for 7.4V lithium polymer battery. Other types of power input are not recommended.
- Support dual-battery input. The redundant strategy is: The higher voltage battery will be chosen as the power supply.
- There is a LED next to the battery socket. When the capacity is 100%-80%, LED is blue; 80% to 50%, LED is green; 50% to 30%, LED is yellow; Capacity less than 30%, LED is red.
- When capacity of battery is less than 10%. The buzzer will beep. It will not stop before the shutdown, so that the pilot will pay attention to the low battery after landing.
- In the dual battery working mode, if one battery is disconnected, the system works uninterruptedly, and the LED and buzzer alarm are triggered at the same time. The alarm will not be stopped this round.
- Gemini also supports single battery working mode.
- When the battery is connected to Gemini, there is a milliamp power consumption even if it is turned off. If it is not used on the same day, please disconnect batteries from Gemini.
- If battery socket on main body is often plugged and unplugged, there is a risk of damage. It is recommended to connect the battery with the adapter cable.

Signal source

- Gemini supports SBUS1 or SBUS2 serial bus input protocol and supports up to 18 channels of PWM output. How many channels are included in the bus, please refer to the receiver's manual.
- Supports dual signal input. The redundant policy is: RX1 is the main receiver, and RX2 is the auxiliary receiver. When the RX1 signal quality is abnormal or the signal is lost, switch to RX2. When RX1 is recovered, switch back to RX1.
- Signal sources have their own LED indicators. No signal, LED is off. When signal is normal, LED is always on; if the signal is abnormal, the LED blinks slowly; if signal lost and recovered (for example, the wire contact problem), the LED blinks quickly.
- In the dual receiver working mode, one signal is lost, the system works uninterrupted, and the buzzer alarm is triggered at the same time.
- Gemini also supports single receiver working mode.
- Gemini provides the same voltage to the receiver and output sockets, please ensure that the receiver can work at this voltage.
- The power supply capacity of the signal port is about 3A. It can power some servos or devices, but it is not recommended.
- Different types of receivers are not recommended for mixing use (eg 6208SB + 6108SB), although this works.

Switch

Gemini is equipped with FSS-5 electronic switch. Press and hold for 3 seconds to turn on, press and hold 3 seconds to shut down. After power is turned on, the Gemini will perform a self-test. In the single-power mode, the buzzer will beep once, and in the dual-battery mode, two beeps will sound. The switch has a Fail Safe function, any damage or disconnection will not cause the main body powered off. There are dual battery status LEDs on the switch, which are synchronized with the body battery indication. Please refer to the previous section for details.

Servo outputs

Gemini decodes up to 18 PWM channels, of which 1-16CH are proportional channels and 17CH&18CH corresponds to DG1 & DG2 switching channels. If input source is less than 18 channels, the excess channels have no output signal. The maximum peak current of each socket is 5 amps, and 2.5 amps continuous. Excessive current will damage the socket. The output refresh frequency is synchronized with S.BUS frame rate. In the 18-channel FASST/FASSTest(MULTI) mode, the frequency is around 70 Hz; in the 12-channel FASSTest mode, the frequency is 170 Hz (only digital servo can be used at this frequency).

HPB (High Power Bus)

Two HPB ports are equipped on both sides of the Gemini, which have the following characteristics:

- Each HPB port has a current output capability of 30A.
- After re-encoding the channel data, HPB outputs the S.BUS1 signal.
- It can be directly connected to the S.BUS1/S.BUS2 servo or works with the Dualsky S.HUB MINI.

Status indicator

There are 3 indicators near the output area, as shown on the right. After power on, the details are as follows:



- **Signal** signal comprehensive indication

Blue solid, when RX1&RX2 signals are normal.
Green solid, when signal source switching occurred;
Yellow solid, when one signal is lost or in one receiver mode
Red solid, when two signals are abnormal at the same time.
Alarm triggered. Nonstop this round.

- **HV** high voltage output indication

If output voltage is 6.0V, the light is off; 6.6V or 7.4V light is on.
Please pay attention to use high voltage servo, receiver and equipment when the voltage is 6.6V or 7.4V.

- **Load** load indicator

Reflects the internal temperature of the host, initially the light is blue, above 50 degrees green, above 70 degrees yellow, above 80 degrees red and triggers buzzer alarm.

Voltage regulation and capability of output current

Thanks for linear regulation technology. Gemini provides up to 30 amps of "pure" current (low ripple and high load rate) for remote control systems. The output voltage can be set on the side of the body. At different voltages, the capability of output current is as follows:

7.4V - 30A continuous output (HV indicator is on)

6.6V - 20A continuous output (HV indicator is on)

6.0V - 15A continuous output (HV indication is off)

Data telemetry

Gemini provides 3 amps for the receiver, and the RX1 main receiver can directly connect to various sensors if it has a telemetry function. Regulated voltage is also automatically returned, no additional wiring is required. It is recommended to set a return voltage alarm on transmitter to improving flight safety. For example: when 7.4V is regulated, the transmitter can set a 7.3V alarm prompt. When the battery voltage drops below 7.5V, the regulated voltage cannot maintain 7.4V, it decreases as the battery voltage decreases. Then transmitter's alarm is triggered during flight. Gemini's battery indicators should be solid yellow.

Installation

- The Gemini body has four mounting holes and is fixed to the body with screws.
- When Gemini 3018 is used in a strong vibration environment, it is necessary to install shock absorbing rubber fittings.
- The upper and lower housing of Gemini are involved in heat dissipation and cannot be covered or bonded to model.
- The switch is designed to facilitate screws to be fixed on the outside of the fuselage or on the equipment board.
- The body and switch are not waterproof.

Disclaimer

Thank you very much for using this product. Please use this product strictly in accordance with the manual. We do not assume any liability arising out of the use of this product or illegal modification or improper operation, including but not limited to indirect damage or joint liability, the maximum compensation is not higher than the price of the product itself. By using this product, you agree to the terms of this statement.

Warranty

Dualsky electronic products warranty is for 12 months from the date of sale. If you want to claim during the warranty period, please contact your dealer immediately. The cashier receipt at the model store can prove whether the goods are under warranty. Please note that the warranty period will not be extended under any circumstances. Warranty service is provided free of charge for any functional defects, production failures or material defects during the warranty period. We will not accept any further claims, such as the user is responsible to pay the return shipping cost of the indirect damaged goods, we will pay for the return shipping cost to the user. If the shipping costs are not prepaid, we will not accept the goods. We do not accept the damage caused by transportation and do not make up for the loss of transportation. We recommend you to buy transportation insurance and send your equipment to the service center. We can process your claim if the following conditions are met:

- Provide cashier receipts
- Operate the equipment correctly according to the instructions
- Use recommended power supplies and accessories
- The damage is not caused by water, reverse polarity, or over load.
- Please provide a concise and accurate description of the fault to help us solve the problem