

Smart Battery Isolator **YD BSM020**

L×W×H(mm):67.5×67.5×53.5



Features

- | Prevent loads on auxiliary battery from draining the main battery;
- | Works with all alternator types, No diode efficiency loss;
- | Reduces charging system workload by not connecting auxiliary battery until primary battery is charged to 13.2V;
- | Lower strain on expensive charging components extends their useful life;
- | Allows bi-directional charging from alternator or from shore/campground power charger/converter when available;
- | Simple installation - Connect to main battery, auxiliary battery, and ground;
- | LED status indicator, Smaller, lighter, less heat generated

Ordering Information

<u>YD BSM020</u>	<u>- 150</u>	<u>- 12</u>	<u>-XXX</u>
1	2	3	
1 Part number:: YD BSM020			
2 Contact Rating : 100: 100A; 150: 150A; 200: 200A			
3 Coil rated Voltage(VDC): 12: 12V, 24: 24V			
4 Time parameter can be set according to customer's special needs			

Performance parameter

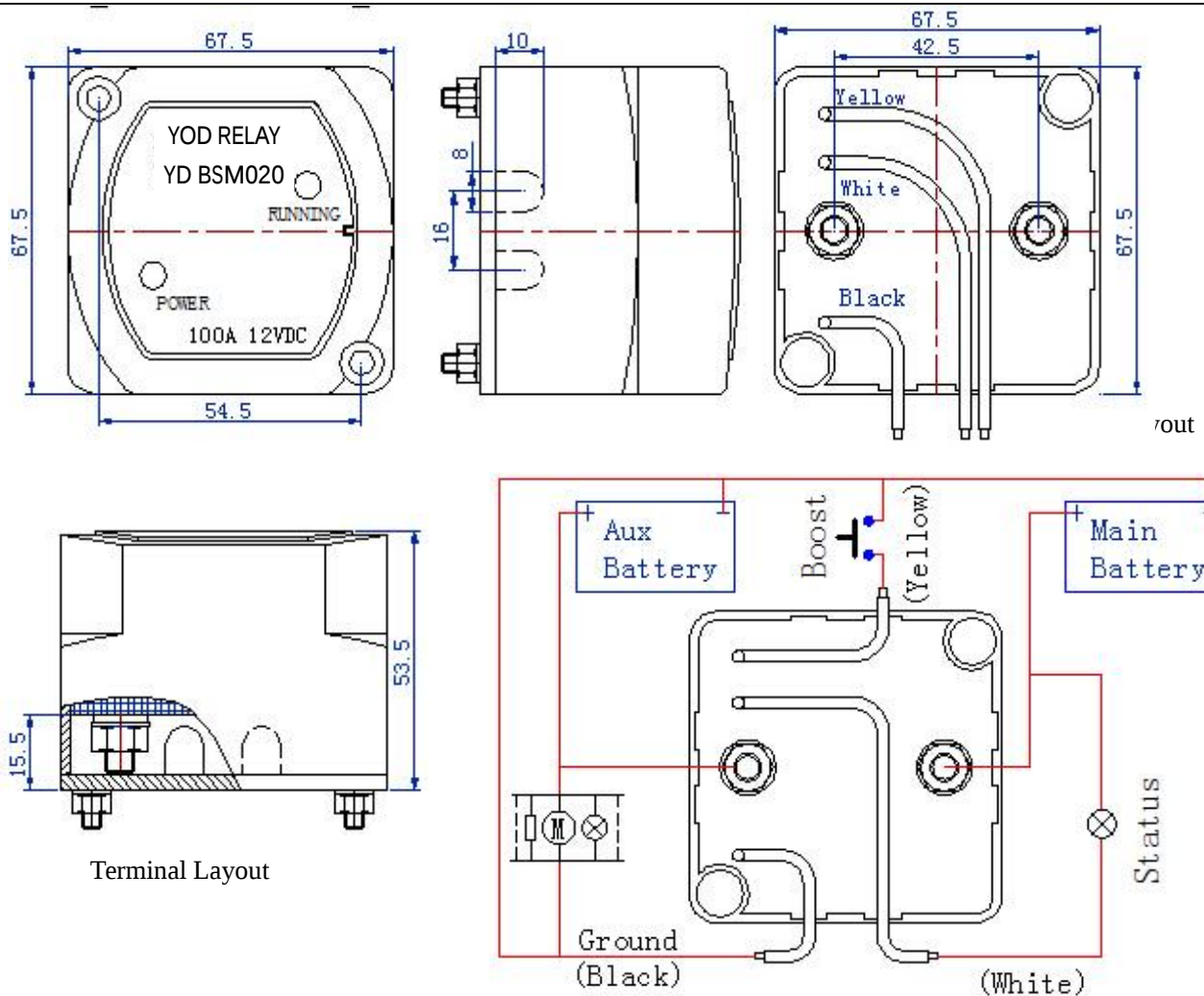
		Min	Typical	Max	Operate Times	Release Times
Normal input voltage	12VDC	9VDC		16VDC		
	24VDC	18VDC		32VDC		
Connect voltage(NF*)	12VDC		≥13.2V		10 s	
	24VDC		≥26.4V		10 s	
Disconnect voltage(NF**)	12VDC		≤12.7V			10 S
	24VDC		≤25.4V			10 S
Emergency start					0 s	60 s (U<12.7V)
					0 s	60s (U<25.4V)
Continuous current			200A			
Quiescent current			5mA	8mA	Relay off, start signal input open or grounded	
Battery terminals	Specification				Torque	
	5/16-24				50 in-lbs (5.78 Nm)	

Operation condition

Operating temperature range	-40℃~ +85℃	Operating condition
Ingress protection	IP65	Per IEC
Humidity	0 to 90% RH	
Vibration resistance	10~500Hz	per SAE J1455
Shock		per SAE J1455
Thermal shock		per SAE J1455
EMI/RF		per SAE J1455 & SAE J1113
Weight(Approx.)	160g	

**Layout (Bottom views, Unit: mm)**

Dimensions / Wiring diagram (Bottom views)

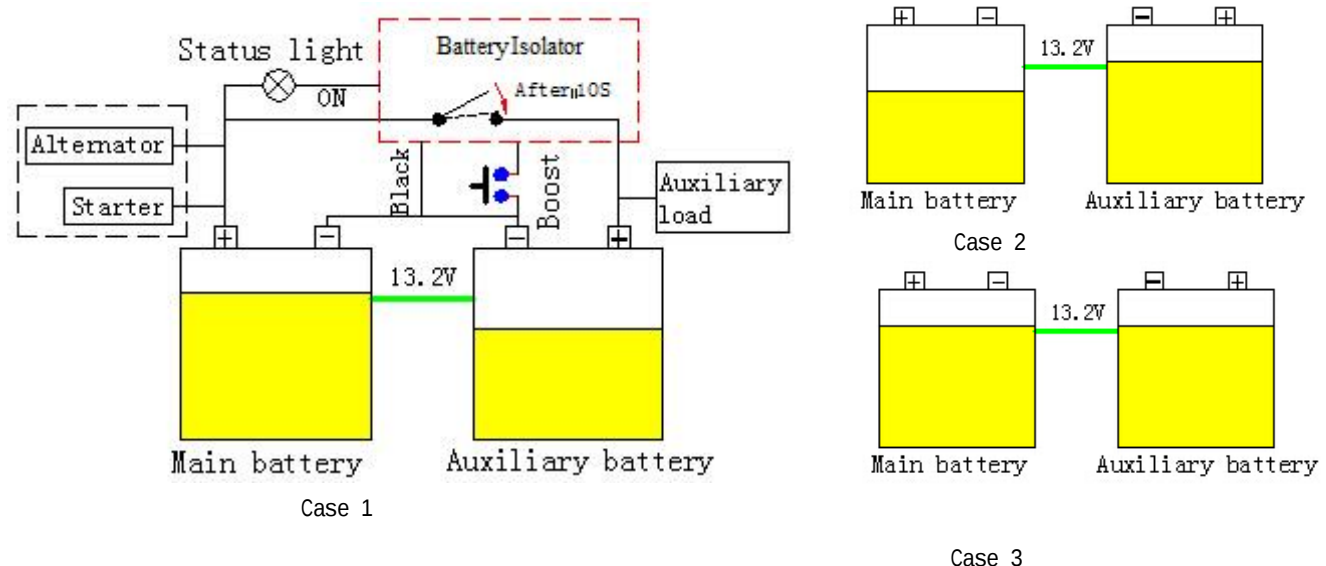


Wiring diagram (Bottom views)

Note: the anode feet of the isolator can answer the main battery or secondary battery, their position can replace each other.

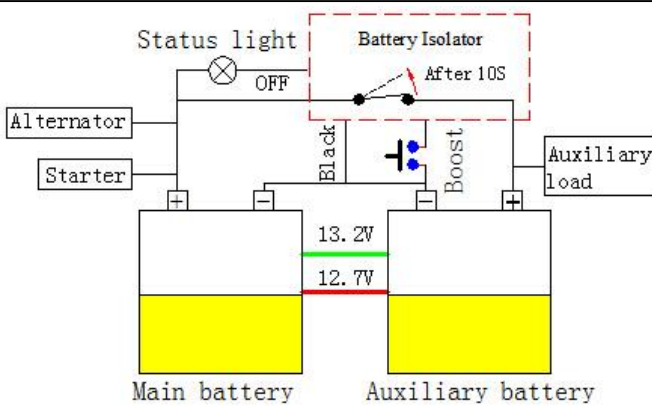
The three states of the smart battery isolator

- 1、 Working state: when the main or auxiliary battery voltage is greater than 13.2 V, isolator, advocate complementary battery for all electrical work together, charger to advocate complementary battery charge together. There are three working state.

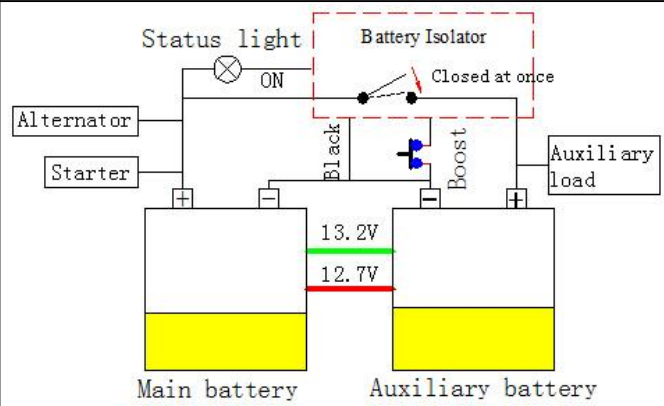




2、 Isolation: when the main and auxiliary battery voltage is less than 12.7 V, the isolator disconnect, main battery only provided to the main electrical power, additional use auto electrical power supplied by the secondary battery and charger only guarantee the main battery charging, until the battery voltage is greater than 13.2 V, to advocate complementary with battery power.

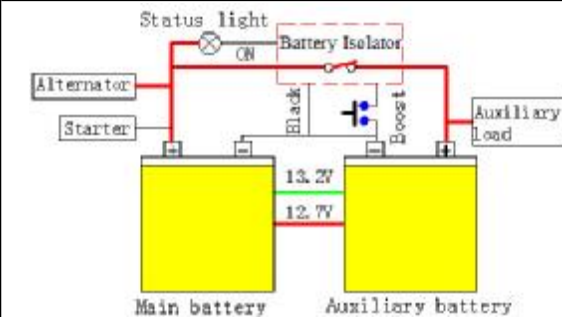


3、 A state of emergency: when the main battery voltage and auxiliary battery voltage is less than 13.2 V, cause the car can't start, then can use isolator emergency start one kind of function, make advocate complementary battery together for a car. Emergency release time is 1 minutes after start.

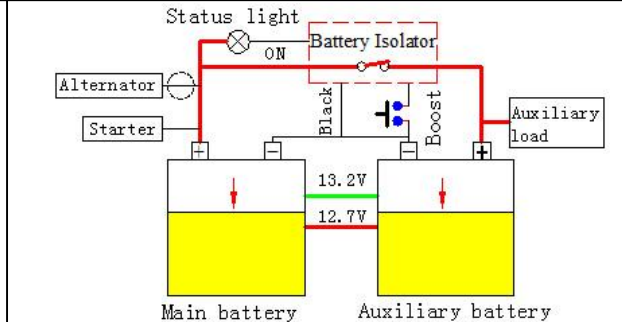


The working process of the smart battery isolator

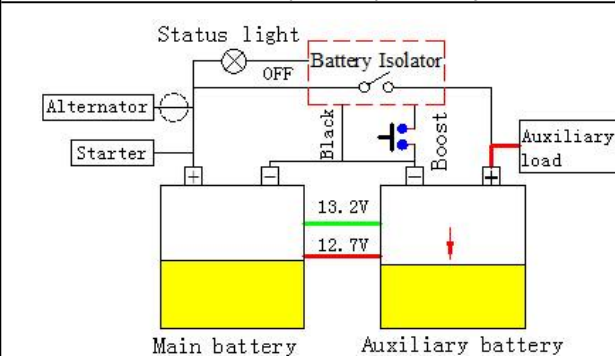
1 Vehicle at run time, advocate complementary battery voltage is greater than 13.2 V, isolator, advocate complementary battery for all electrical work together, the motor is to advocate complementary battery charging together



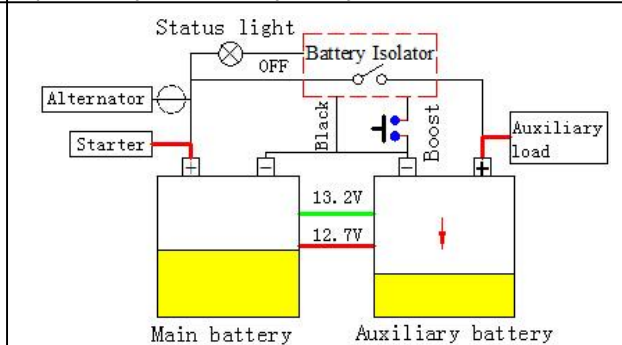
2 When the engine is closed, the wrong charger battery charging, the isolator to connect, advocate complementary battery for all electrical work together;



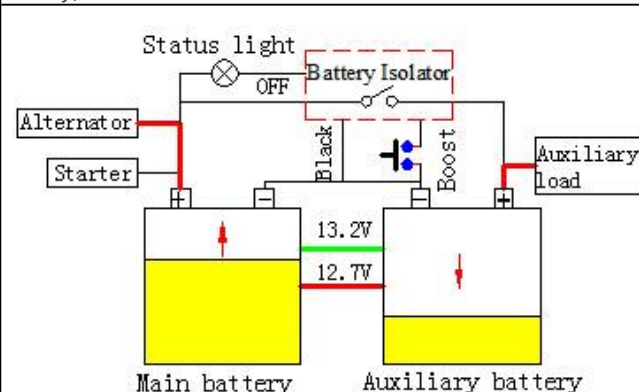
3 When the main and auxiliary battery voltage is less than 12.7 V, the isolator disconnect, main battery only provided to the main electrical power, the car of additional electrical power is provided by the secondary battery;



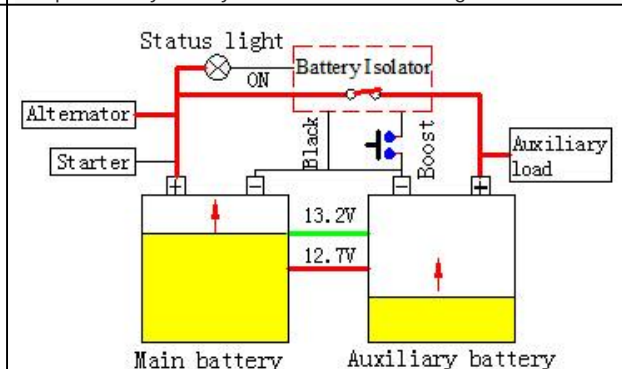
4 When the vehicle restarts, the main battery has enough power to start the engine, isolator disconnect, additional electrical power is provided by the secondary battery;



5 The engine starts, the main battery charging, first ensure that the main battery power, additional electrical power is provided by the secondary battery;

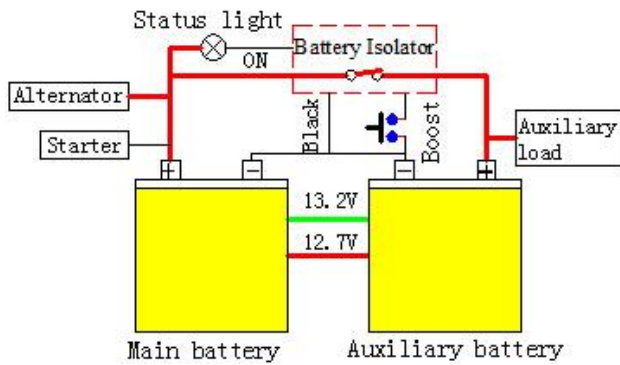


6 When the main battery is 13.2 V, isolator (connection), work together to advocate complementary battery charging, advocate complementary battery for all electrical work together



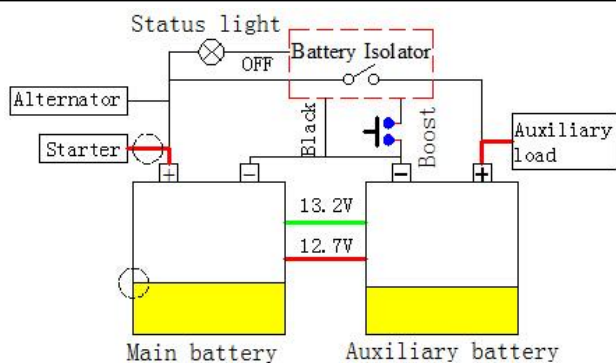


7 Isolator now in working state (connection), advocate complementary battery for all electrical work together, charger to advocate complementary battery charging, the battery is in a state of full power, battery and isolator again returned to the circulation process.

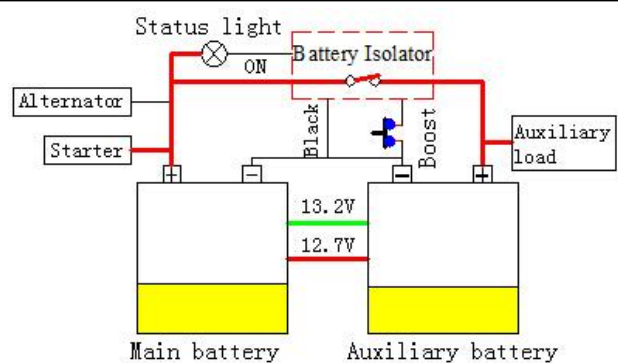


Emergency boot process of smart battery isolator

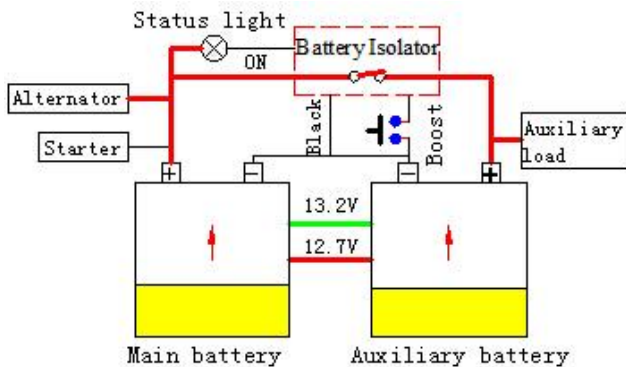
1 When the main battery voltage loss, and secondary battery voltage is less than 13.2 V, cause the car can't start, then can use isolator emergency start function;



2 When press the emergency button, the isolator began to work immediately, make advocate complementary battery together for a car emergency start function;



3 The car starts to advocate complementary battery charging together, emergency start in a minute.



4 A minute later, intelligent state intelligent isolator, if the main and auxiliary battery voltage is greater than 13.2 V, the isolator working (connection), advocate complementary battery for all electrical work together; If the main and auxiliary battery voltage is less than 12.7 V, the isolator disconnect, main battery only provided to the main electrical power, additional use auto electrical power provided by the secondary battery.

