Test Report of Bidirectional DC Power Supply

Model: ESD-40-150-534-R-BSS

Nanjing Bridge New Energy Technology Co., Ltd

Release Date: 8/17/2018

Test Items of Bidirectional DC Power Supply

Model	ESD 40-150-534-R-BSS		**Manufacturing Date**	August 16, 2018
Quantity: 1 set				
NO.	**Inspection Item**			**Test results**
1	General inspection			☑Conformity □Non Conformity
2	Functional Check	Display		☑Conformity □Non Conformity
		Communication		☑Conformity □Non Conformity
		Voltage setting		☑Conformity □Non Conformity
		Current/Power limit setting		☑Conformity □Non Conformity
		Internal resistance setting		☑Conformity □Non Conformity
		Sequence mode		☑Conformity □Non Conformity
		Wave browse		☑Conformity □Non Conformity
		Other parameters setting		☑Conformity □Non Conformity
3	Performance Test	Voltage Accuracy		☑Conformity □Non Conformity
		Current Accuracy		☑Conformity □Non Conformity
		Dynamic Performance		☑Conformity □Non Conformity
4	Safety Test	Over voltage protection		☑Conformity □Non Conformity
		Over current protection		☑Conformity □Non Conformity
		Emergency stop		☑Conformity □Non Conformity
		Leakage current protection		☑Conformity □Non Conformity

Signature of Test Engineer: 何[illegible]

Content

1.General Inspection

DATE: August 16, 2018 Temperature: 27°C Relative humidity: 61%

Technical requirements: The following requirements shall be met.

The test results:

Check the content	Check the result
The shell should be flat, without obvious concavo-convex mark, scratch, deformation and other defects;	√
Surface coating should be uniform, should not fall off;	√
Parts are firmly fixed reliably, and without defects and damages such as rust, burr and crack.	√
All nameplates and signs are properly and firmly installed with clear writing	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non Conformity

2.Functional Check

2.1 Display

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
Display voltage, current and power of secondary side of transformer	√
Display voltage, current and power of DC output	√
Display temperature of IGBTs	√
Indicator of communication, such as 'Local', 'Remote'	√
Indicator light of power supply's status, such as 'Connected', 'Power', 'Fault'	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.2 Communication

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
Remote computer could communicate with power supply via LAN interface	√
When operating with LAN communication interface, power supply could respond to remote control.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.3 Voltage Setting

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
Adjust the output voltage, check whether is there corresponding voltage output value	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.4 Current/Power Limit Setting

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
Set the upper and lower limitation of current and power, then adjust the load, make sure the output current and power couldn't exceed the limitation value.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.5 Internal Resistance Setting

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
The value of internal resistance could be set, and there will be a corresponding voltage drop if power supply output current. Range 0.01-2.0Ohm, step:0.01Ohm	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.6 Sequence Mode

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
In sequence mode, fill in parameters for 4 steps, and output. check whether the output voltage changes according to setting value.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.7 Wave Browse

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
The wave of output voltage/current could be browsed by check the checkbox on the left side.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

2.8 Other Parameters Setting

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
OVP/OCP, leakage protection could be set in setting menu.	✓

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

3. Performance Test

3.1 Voltage Accuracy

Date: August 16, 2018 Temperature:27°C Relative humidity: 61%

Instrument: LMG670

Voltage Set (V)		Measured Voltage(V)	Bias (V)
10% V_{RATED}	15	15.0287	0.0287
20% V_{RATED}	30	30.0379	0.0379
30% V_{RATED}	45	45.0452	0.0452
40% V_{RATED}	60	60.0305	0.0305
50% V_{RATED}	75	75.045	0.045
60% V_{RATED}	90	90.024	0.024
70% V_{RATED}	105	105.024	0.024
80% V_{RATED}	120	120.012	0.012
90% V_{RATED}	135	135.023	0.023
100% V_{RATED}	150	150.026	0.026

Conclusion: ☑Conformity □Non-Conformity

3.2 Current Accuracy

Date: August 16, 2018 Temperature:27°C Relative humidity: 61%

Instrument: LMG670+DS600ID

Current Set (A)		Measured Cuurent(A)	Bias (A)
10% I_{RATED}	53.4	53.17	-0.23
20% I_{RATED}	106.8	106.7247	-0.0753
30% I_{RATED}	160.2	160.211	0.011

40% I_{RATED}	213.6	213.1818	-0.4182
50% I_{RATED}	267	266.556	-0.444
60% I_{RATED}	320.4	320.112	-0.288
70% I_{RATED}	373.8	373.595	-0.205
80% I_{RATED}	427.2	427.005	-0.195
90% I_{RATED}	480.6	480.443	-0.157
100% I_{RATED}	534	533.888	-0.112

Conclusion: ☑Conformity □Non-Conformity

3.3 Dynamic Performance

Date: August 16, 2018 Temperature:27°C Relative humidity: 61%

Instrument: LMG670+DS600ID

Current Set (A)		Rise time (ms)	Fall time (ms)
Initial value of current	Final value of current		
0	534	0.836	—
534	0	—	0.829
0	-534	—	0.835
-534	0	0.831	—
534	-534	—	1.038
-534	534	1.037	—

Conclusion: ☑Conformity □Non-Conformity

4.Safety Test

4.1 Over Voltage Protection

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
While output/feedback voltage is higher than the nominal voltage of power supply, the power supply should turn the output switch off.	✓

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

4.2 Over Current Protection

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
While the output/feedback current exceed the nominal value, the power supply should turn the output switch off.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

4.3 Emergency Stop

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
Press the emergency stop button while the machine is running to see if the circuit is cut and the fault light is displayed	√
Reset the emergency stop button and the fault to see if the circuit can be restarted	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity

4.4 Leakage Current Protection

DATE: August 16, 2018 Temperature:27°C Relative humidity: 61%

Technical requirements: the following requirements shall be met.

The test results:

Check the content	Check the result
If leakage current protection is turned on, the power supply should cut it output off while there is a leakage current between positive/negative pole to PE.	√

Note: the symbol "√" indicates that the inspection result is correct, and "x" indicates that the inspection result is wrong.

Conclusion: ☑Conformity □Non-Conformity