ENERGY STAR PROGRAMREQUIREMENTS FOR ELECTRIC VEHICLE SUPPLY EQUIPMENT VER 1.2

MEASUREMENT AND TEST REPORT

For

Star Charge (Jiangsu) Digital Technology Co., Ltd.

Room 406, Building 3, Linghang Mansion, High-speed Rail New Town, 3 Xiushuihe Road, Xinqiao Street, Xinbei District, Changzhou, Jiangsu, China

Test Model:
AC0120AN0600300
Series model:
AC0120AN0601300, AC0096AN0600300, AC0096AN0601300

Report Type: Original Report		**Product Type:** JUNO AC CHARGER
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Report Number:	2502A37175E-SF	
Test Date:	2025-12-25 to 2025-12-30	
Report Date:	2026-03-06	
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2502A37175E-SF	Original Report	2026/03/06

1. GENERAL INFORMATION

The Star Charge (Jiangsu) Digital Technology Co., Ltd. models: AC0120AN0600300 is one port JUNO AC CHARGER. One sample was received on 2025-12-25.

The difference between the product models as below:
Except for the differences in below table, the products are identical in every other way.

Differences Description		
Tested Model(s)	Series Models	Differences Items
AC0120AN0600300	AC0120AN0601300 AC0096AN0600300 AC0096AN0601300	AC0120AN0600300: 12kW 50ATypel connector +hard wire AC0120AN0601300: 12kW 50ANACS connector +hard wire AC0096AN0600300: 9.6kW 40ATypel connector + NEMA plug AC0096AN0601300: 9.6kW 40A NACS connector + NEMA plug

Product General Information

Model Tested:	AC0120AN0600300
Manufacturer:	Star Charge (Jiangsu) Digital Technology Co., Ltd.
Brand Name:	JUNO
Product Designation:	Electric Vehicle Supply Equipment
Rated Voltage/Frequency:	208-240Vac, 60Hz
Max Output Current:	50A
Product Type:	Level 2
Number of Outputs:	1
National Electric Code Product Safety Standards Met:	UL2594
Network Protocol with Wake Capability:	WIFI, Ethernet(optional), 4G(optional)
Network Protocol Enabled During Testing:	Wi-Fi
Presence of Full Network Connectivity:	Yes
Input Cord Length:	The installation length is determined by the final installation system NEMA Plug: 0.7m
Input Cord Gauge:	Hard wire: N/A NEMA Plug: 2*13.3mm2(6AWG)+1*8.37mm2(8AWG)+2*0.824mm2(18AWG)
Output Cord Length:	25 FT/7.5m
Output Cord Gauge:	50A: 2*8.37mm2(8AWG)+1*5.26mm^2(10AWG)+2*0.824mm2(18AWG) 40A: 2*6.632mm^2(9AWG)+1*6.632mm^2(9AWG)+2*0.824mm2(18AWG)
High Resolution Display:	No (The product is without display)
Automatic Brightness Control (ABC):	No (The product is without display)
In-use speaker:	No
In-use PLC boards:	No
In-use credit card reader:	No
In-use RFID systems:	Yes
In-use RGM:	No
In-use Occupancy Sensing (Camera, Proximity Sensor etc.):	No

2. SUMMARY OF TEST RESULTS

Criteria Item	Reported Value	Result	Requirement
No Vehicle Mode Input Power (W)	3.9228	Pass	<11.5W (See Sec 4.1 for details)
No Vehicle Mode Power Factor	1.000	N/A	Report only
Partial On Mode Power (W)	3.4836	Pass	<8.5W (See Sec 4.2 for details)
Partial On Mode Power Factor	1.000	N/A	Report only
Idle Mode Power (W)	6.546	Pass	<31.5 W (See Sec 4.3 for details)
Idle Mode Power Factor	1.000	N/A	Report only
Full Current (50A) Operation Mode Input Power (W)	1.7742	N/A	Report only
Full Current (50A) Operation Mode Output Power (W)	-1.19946	N/A	Report only
30A Operation Mode Input Power (W)	0.7374	N/A	Report only
30A Operation Mode Output Power (W)	-0.36774	N/A	Report only
15A Operation Mode Input Power (W)	2.7036	N/A	Report only
15A Operation Mode Output Power (W)	-0.07536	N/A	Report only
4A Operation Mode Input Power (W)	4.1776	N/A	Report only
4AOperation Mode Output Power (W)	0.00624	N/A	Report only

3. TEST DESCRIPTION

3.1 Test Method

- Level 1 and Level 2Electric Vehicle Supply Equipment: ENERGY STAR Level 1 and Level 2 Electric Vehicle Supply Equipment Test Method (Rev. Apr-2017)
- Electric Vehicle Supply Equipment with Full Network Connectivity: Section 6.7.5.2 of Consumer Electronics Association (CEA) 2037-A, Determination of Television Set Power Consumption

3.2 Test Methodology

The product was operated at240Vac/60Hz. The ambient temperature was maintained at 25°C ± 5°C for duration of the test. The relative humidity was maintained between 10% and 80% for the duration of the test.

The test configuration for measuring voltages, currents, differential voltages and differential currents was setup according to Figure 1b of the EVSE Final Test Method Rev. Apr-2017 and is shown in below.

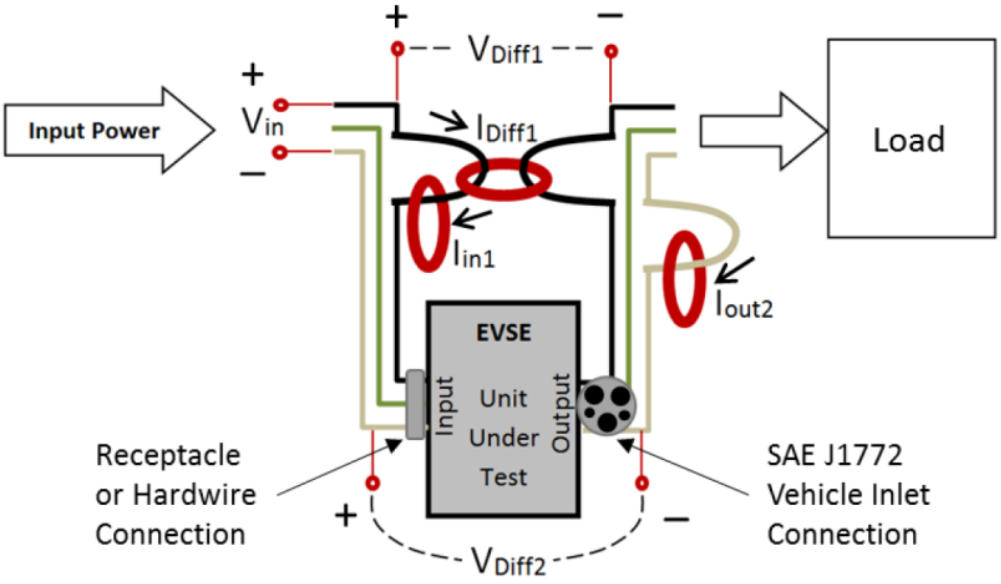


Figure 1b: Schematic of test setup connection

The Vehicle Emulator Module used for testing Partial On Mode (State B) and Idle Mode (State C) was constructed according to Figure 3 of the EVSE Final Test Method Rev. Apr-2017 and is shown in below.

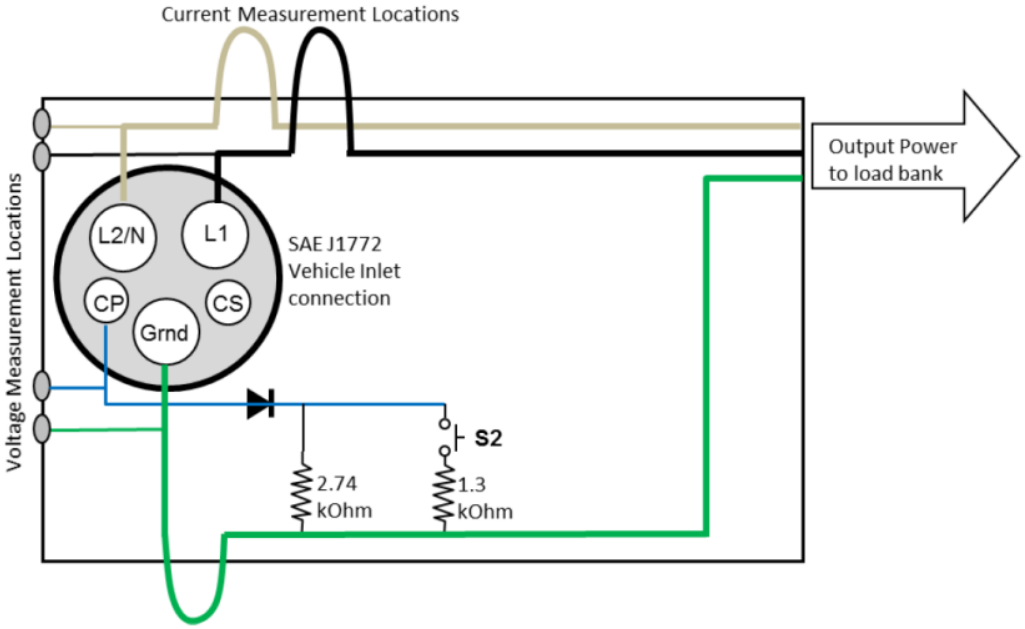


Figure 3: Schematic of Vehicle Emulator Module (VEM)[2]

3.3 Test Equipment List and Details

Equipment	Manufacturer/ Trade mark	Models	Serial Numbers	Calibration Date	Calibration Due Date
Power analyzer	HIOKI	PW6001-06	EP-06-32	2025-04-26	2026-04-25
AC/DC Current probe	HIOKI	CT6846-05	EI-06-41	2025-04-26	2026-04-25
AC/DC Current probe	HIOKI	CT6846-05	EI-06-42	2025-04-26	2026-04-25
AC/DC Current probe	HIOKI	CT6846-05	EI-06-43	2025-04-26	2026-04-25
Clamp ammeter	FLUKE	317	EI-00-20	2025-04-26	2026-04-25
Oscilloscope	YOKOGAWA	DLM3054	EI-00-24	2025-04-26	2026-04-25
HV-differential probe	YOKOGAWA	THDP0200	EV-06-23	2025-04-26	2026-04-25
Power source	ACTIONPOWER	PVA S4-33750/300C	EP-07-23	2025-04-26	2026-04-25
Bidirectional DC source	ACTIONPOWER	FHDC S4-1K/500C	EP-07-02	2025-04-26	2026-04-25
Temperature & Humidity meter	KJ	HTC-1	TT-00-05	2025-04-26	2026-04-25
Temperature & Humidity Chamber	TOMILO	TOFH-15000EWS	TT-07-04	2025-04-26	2026-04-25
Color analyzer	Chroma	Chroma 7123	A71230100056	2025-04-26	2026-04-25

Statement of Traceability: *all calibrations have been performed per the IAS requirements, traceable to the NIST.*

3.4 Test Environmental Conditions

Temperature:	21.5 ºC
Relative Humidity:	54 %

4. TEST RESULTS

No Vehicle Mode – State A

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2624
Real Power (V_{in}, I_{Diff1}) (Wh) for 10 minutes period	0.6538
Real Power (V_{in}, I_{Diff1}) (W)	3.9228
PF	1
Frequency (Hz)	60.00
$P_{NO_VEHICLE}$ (W)	= Real Power (V_{in}, I_{Diff1}) ÷ n =3.9228
Allowance: $P_{NO_VEHICLE_MAX}$ (W)	= 4+ P_{WAKE}+ P_{AUX} = 4+ 1+ 6.5 = 11.5

Partial On Mode – State B1

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2634
Real Power (V_{in}, I_{Diff1}) (Wh) for 10 minutes period	0.5806
Real Power (V_{in}, I_{Diff1}) (W)	3.4836
PF	1
Frequency (Hz)	60
$P_{PARTIAL_ON}$ (W)	= Real Power (V_{in}, I_{Diff1}) ÷ n = 3.4836
Allowance: $P_{PARTIAL_ON_MAX}$ (W)	= 4+ P_{WAKE}+ P_{AUX} = 4+ 1+ 6.5 = 11.5

Note: State B1.

Idle Mode – State C

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2673
Real Power (V_{in}, I_{Diff1}) (Wh) for 10 minutes period	1.0910
Real Power (V_{in}, I_{Diff1}) (W)	6.546
PF	1
Frequency (Hz)	60.00
P_{IDLE} (W)	= Real Power (V_{in}, I_{Diff1}) ÷ n = 6.546
Allowance: P_{IDLE_MAX} (W)	= 0.4 × Max Current + 4 + P_{WAKE}+ P_{AUX} = 31.5

Operation Mode – State C

a) Maximum Load Current and Loading Condition 1: Load Current = 50.0A

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2775
Real Power (Vin, IDiff1) (Wh) for 10 minutes period	0.2957
Real Power (V_{in}, I_{Diff1}) (W)	1.7742
PF	1
Frequency (Hz)	60
V_{Diff2} (V)	1.32915
I_{out2} (A)	49.816
V_{Diff1} (V)	1.35859
I_{in1} (A)	49.882
Real Power (VDiff2, Iout2) (W) for 10 minutes period	9.07168
Real Power (V_{Diff2}, I_{out2}) (W)	54.43008
Real Power (VDiff1, Iin1) (W) for 10 minutes period	9.27159
Real Power (V_{Diff1}, I_{in1}) (W)	55.62954
P_{OUTPUT} (W)	= Real Power (V_{Diff2}, I_{out2}) - Real Power (V_{Diff1}, I_{in1}) =-1.19946
P_{INPUT} (W)	= Real Power (Vin, IDiff1) =1.7742
P_{loss} (W)	= P_{INPUT} - P_{OUTPUT} = 2.97366

b) Loading Condition 2: Load Current = 30.0A

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2702
Real Power (Vin, IDiff1) (Wh) for 10 minutes period	0.1229
Real Power (V_{in}, I_{Diff1}) (W)	0.7374
PF	1
Frequency (Hz)	60
V_{Diff2} (V)	0.80862
I_{out2} (A)	29.689
V_{Diff1} (V)	0.81151
I_{in1} (A)	29.751
Real Power (V_{Diff2}, I_{out2}) (W) for 10 minutes period	3.24146
Real Power (V_{Diff2}, I_{out2}) (W)	19.44876
Real Power (VDiff1, Iin1) (W) for 10 minutes period	3.3027
Real Power (V_{Diff1}, I_{in1}) (W)	19.8162
P_{OUTPUT} (W)	= Real Power (V_{Diff2}, I_{out2}) - Real Power (V_{Diff1}, I_{in1}) = -0.36774
P_{INPUT}(W)	= Real Power (Vin, IDiff1) = 0.7374
P_{loss} (W)	= P_{INPUT} - P_{OUTPUT} = 1.10484

c) Loading Condition 3: Load Current = 15.0A

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2676
Real Power (Vin, IDiff1) (Wh) for 10 minutes period	0.4506
Real Power (V_{in}, I_{Diff1}) (W)	2.7036
PF	1
Frequency (Hz)	60
V_{Diff2} (V)	0.73324
I_{out2} (A)	14.357
V_{Diff1} (V)	0.72711
I_{in1} (A)	14.436
Real Power (V_{Diff2}, I_{out2}) (W) for 10 minutes period	0.75241
Real Power (V_{Diff2}, I_{out2}) (W)	4.51446
Real Power (VDiff1, Iin1) (W) for 10 minutes period	0.76497
Real Power (V_{Diff1}, I_{in1}) (W)	4.58982
P_{OUTPUT} (W)	= Real Power (V_{Diff2}, I_{out2}) - Real Power (V_{Diff1}, I_{in1}) = -0.07536
P_{INPUT}(W)	= Real Power (Vin, IDiff1) = 2.7036
P_{loss} (W)	= P_{INPUT} - P_{OUTPUT} = 2.77896

d) Loading Condition 4: Load Current = 4.0 A

Test Item	Measured Value
V_{in} (V)	240
I_{Diff1} (A)	0.2671
Real Power (Vin, IDiff1) (Wh) for 10 minutes period	0.6961
Real Power (V_{in}, I_{Diff1}) (W)	4.1766
PF	1
Frequency (Hz)	60
V_{Diff2} (V)	0.59466
I_{out2} (A)	4.299
V_{Diff1} (V)	0.51722
I_{in1} (A)	4.486
Real Power (V_{Diff2}, I_{out2}) (W) for 10 minutes period	0.06741
Real Power (V_{Diff2}, I_{out2}) (W)	0.40446
Real Power (VDiff1, Iin1) (W) for 10 minutes period	0.06637
Real Power (V_{Diff1}, I_{in1}) (W)	0.39822
P_{OUTPUT} (W)	= Real Power (V_{Diff2}, I_{out2}) - Real Power (V_{Diff1}, I_{in1}) = 0.00624
P_{INPUT} (W)	= Real Power (Vin, IDiff1) = 4.1776
P_{loss} (W)	= P_{INPUT} - P_{OUTPUT} = 4.17136

5. EUT PHOTOGRAPHS

Model Name: AC0120AN0600300 :

5.1 EUT-Top view



5.2 EUT –Bottom View



5.3 EUT – Side view:



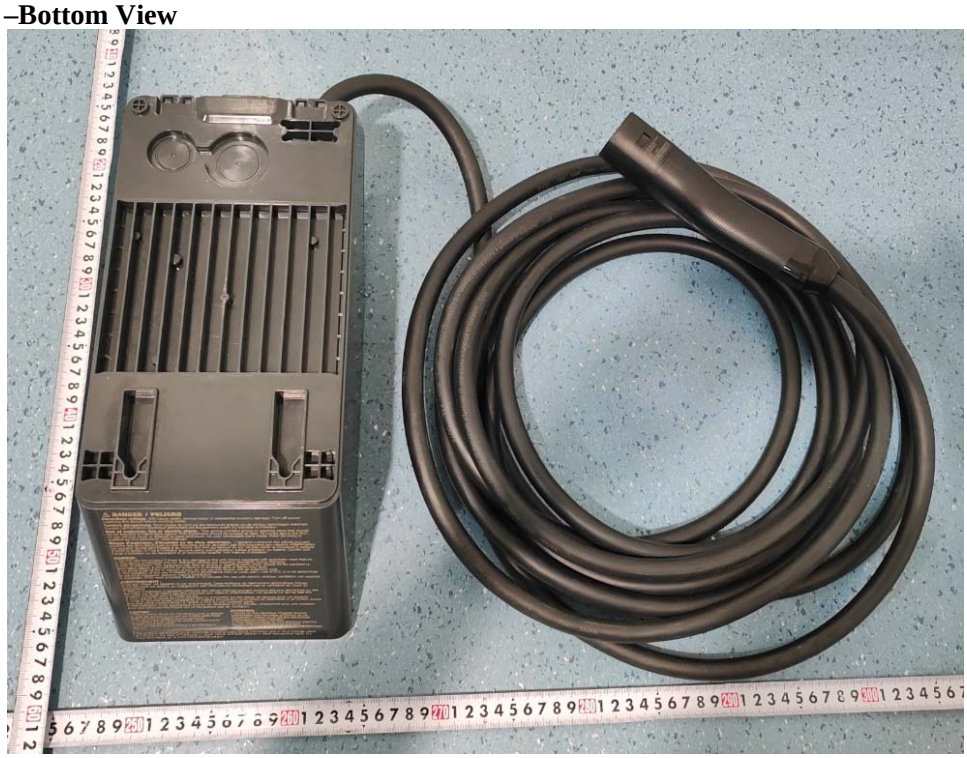


Model Name: AC0096AN0601300 :

5.4 EUT-Top view



5.5 EUT –Bottom View



5.6 EUT – Side view:





5.7 EUT –Output Connector view (Type 1 Connector):





5.8 EUT –Output Connector view (NACS Connector):





5.9 EUT –Label View



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