



Test Report: NGE65U24-P1J

65W AC-DC Reliable Wall-mounted Interchangeable
Type Green Adaptor

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

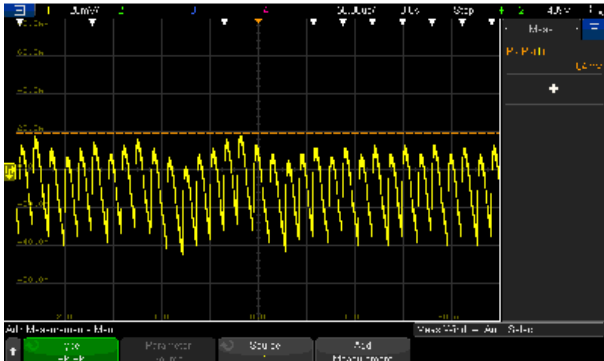
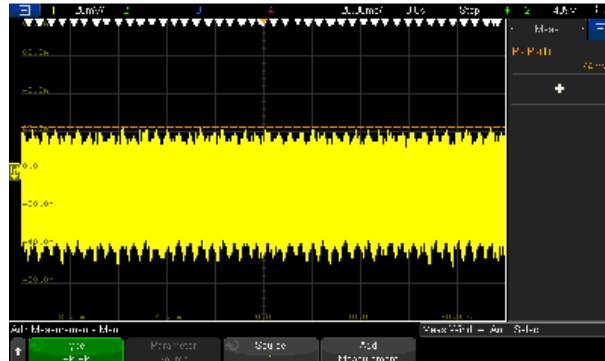
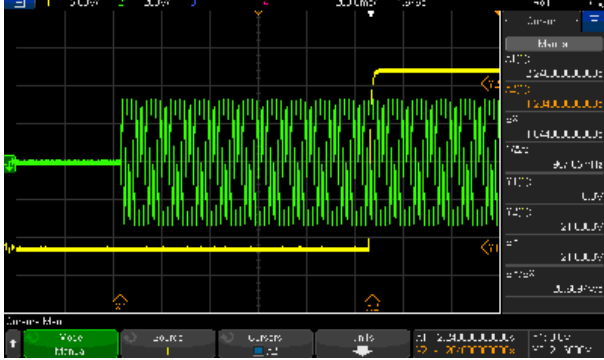
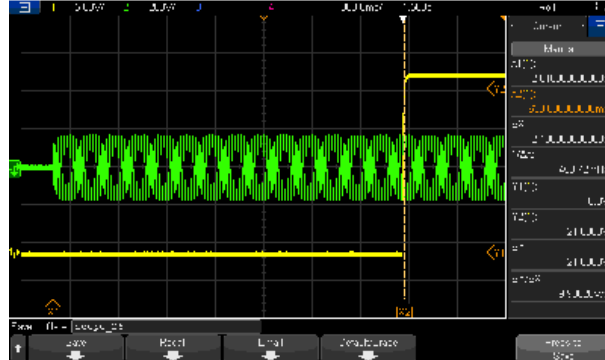
E.M.C. Test

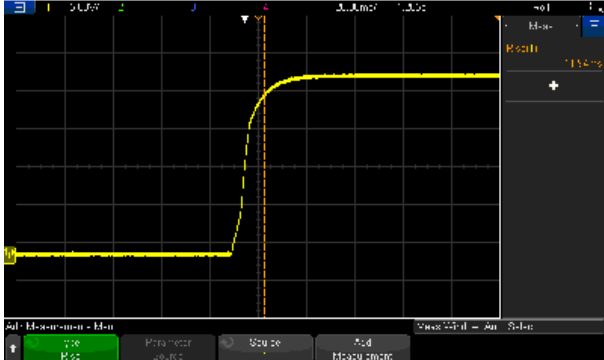
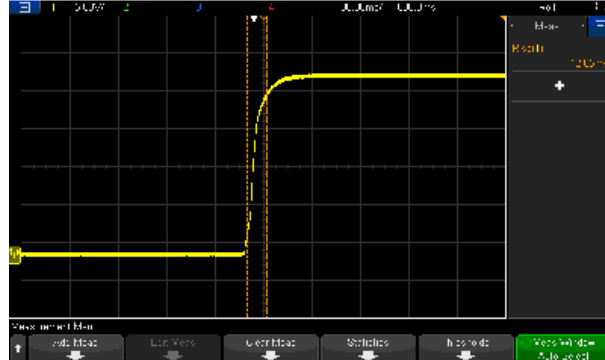
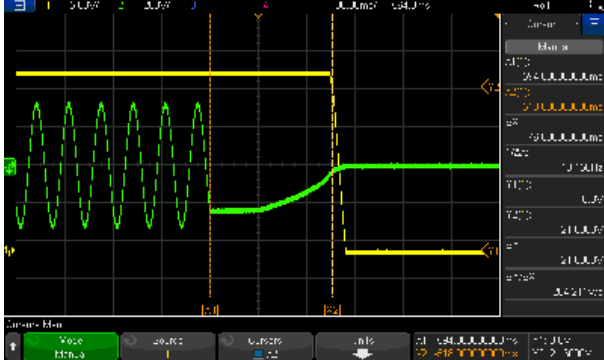
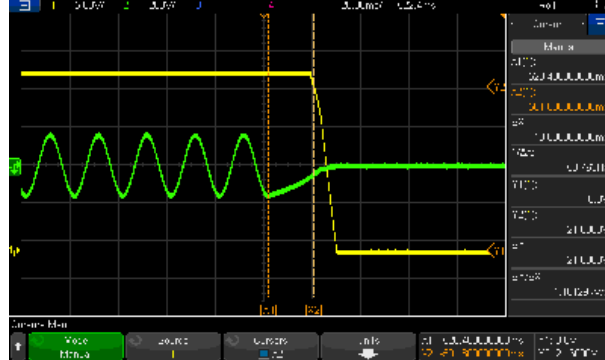
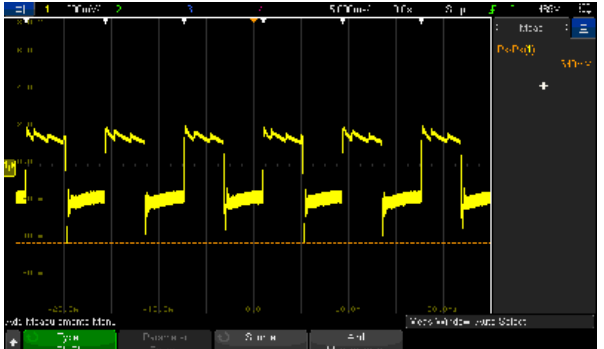
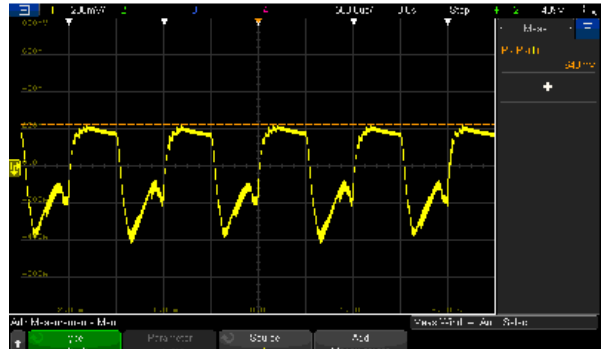
■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST

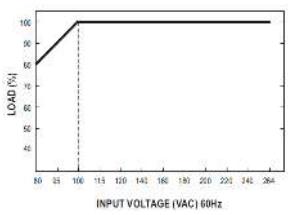
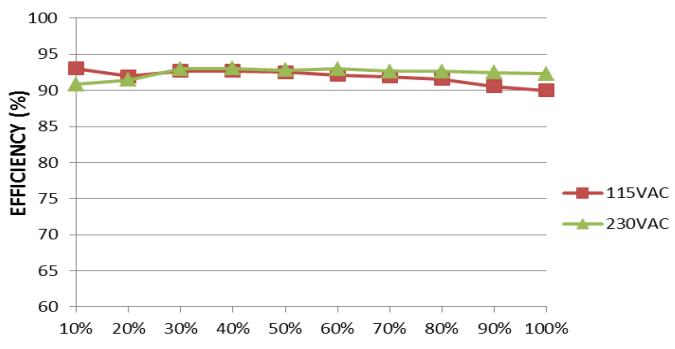
OUTPUT FUNCTION TEST

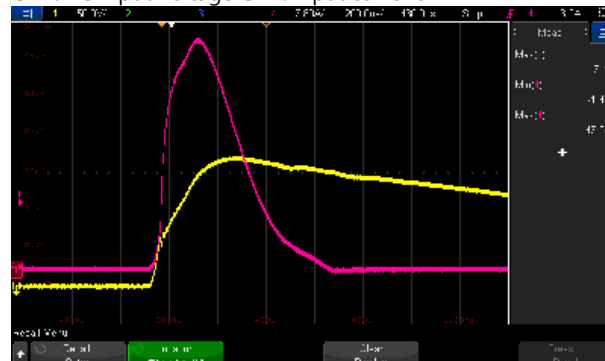
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ +2%	I/P: 80VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	V1: -0.55%~0.55%
2	LINE REGULATION	V1: -1%~ +1%	I/P: 80VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~0%
3	LOAD REGULATION	V1: -2%~ +2%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.55%~0.55%
4	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	1.69%
5	RIPPLE & NOISE (Max)	V1: 240mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 64 mVp-p / high frequency 74mVp-p / low frequency
high frequency :  low frequency : 				
6	SET UP TIME(Max)	230VAC/1500ms 115VAC/3000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 1044ms 115VAC/ 2180ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage  INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage 				

7	RISE TIME (Max)	230VAC/50ms 115VAC/50ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 11.94ms 115VAC/ 12.05ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage  INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage 				
8	HOLD UP TIME (Typ.)	230VAC/30ms 115VAC/10ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 76ms 115VAC/ 18.6ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage  INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage 				
9	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1) FULL/0% LOAD 50%DUTY / 120HZ (2) FULL/0% LOAD 50%DUTY / 1KHZ Ta:25°C	640mVp-p 640mVp-p
FULL /0% LOAD 50%DUTY / 120HZ  FULL /0% LOAD 50%DUTY / 1KHZ 				

10	TRANSIENT RECOVERY TIME	V1: 2400mVp-p < 500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	245mVp-p 0us
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INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	80VAC~264VAC 113VDC~ 370VDC 	(1) I/P: TESTING O/P: FULL LOAD/ 80% LOAD (2) I/P: DC TESTING (L: + N:-) O/P: FULL LOAD/ 80% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL LOAD/ 80% LOAD Ta:25°C I/P: HIGH-LINE+15%=300V O/P:FULL LOAD /MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1) 76.8V~264V/ FULL LOAD 76.6V~264V/ 80% LOAD (2) 110Vdc~370Vdc/FULL LOAD 110Vdc~370Vdc/80% LOAD (3) 110Vdc~370Vdc/FULL LOAD 110Vdc~370Vdc/80% LOAD TEST: OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:80 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 0.8A 115V/ 1.5A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.74A/ 230VAC I =1.13A/ 115VAC
4	LEAKAGE CURRENT	Touch current 100uA/ 264V for 60601	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	75uA
5	NO LOAD CONSUMPTION	< 0.075W	I/P : 240VAC O/P : NO LOAD Ta : 25°C	0.0591W
6	EFFICIENCY(Typ.)	90%	I/P:230VAC O/P:FULL LOAD Ta:25°C	92.3%
EFFICIENCY vs LOAD 				

7	INRUSH CURRENT(Typ.)	230V/100A 115V/50A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =78.5A/ 230VAC I =47.2A/ 115VAC T50=385.6 us/230V
INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current				
INPUT=115VAC/ 60HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current				

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	110%~150% rated output power Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 230VAC I/P: 100VAC O/P: TESTING Ta:25°C	128.8%/ 264VAC 130.9%/ 230VAC 129.9%/100VAC PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	110%~140% rated output voltage Protection type: Clamp by zener diode	I/P: AC OFF O/P: MIN LOAD Ta:25°C	31.17V PROTECTION TYPE : Clamp by zener diode
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 80VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated: 10.6A/ 650V	AC ON/OFF I/P: High-Line +3V =267V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/	Q1 VDS: (1) 522V (2) 518V (3) 530V (4) 522V



65W AC-DC Reliable Wall-mounted
Interchangeable Type Green Adaptor

NGE65 series

			Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	(5) 522V (6) 530V (7) 522V
2	Diode Peak Voltage	Q100 Rated: 45A/150V	AC ON/OFF I/P: High-Line +3V =267 V O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD Ta:25°C	Q100: VDS: (1) 117.6V (2) 116.8V (3) 117.6V (4) 117.6V (5) 117.6V (6) 118.4V (7) 116.8V (8) 117.6V
3	Input Capacitor Voltage	C5 Rated: 120μ /400 V	I/P: High-Line +3V =267V O/P: (1)Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change (4) Full load continue Ta:25°C	(1) 393V (2) 377V (3) 385V (4) 377V
4	Control IC Voltage Test	PWM IC U3 Rated: 8V~ 26.5V O/P IC U101 Rated: 4V~ 13V	AC ON/OFF I/P: High-Line +3V =267 V O/P:(1) FULL LOAD (2) Output Short (3) O.L.P (4) NO LOAD VRmin (LOW LINE) Ta:25°C	U3 (1) 16.3V (2) 16.3V (3) 16.3V (4) 8.8V U101 (1) 9.03V (2) 9.03V (3) 9.03V (4) 8.95V
5	Clamp Diode Peak Voltage	D5 Rated : 600V/1A	AC ON/OFF I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%Duty/1KHz (2) Full load continue Ta : 25°C	(1) 521V (2) 476V



■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4KVAC/min	I/P-O/P: 4.4 KVAC/min Ta:25°C	I/P-O/P:1.64mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 600 VDC Ta:25°C	I/P-O/P:50GΩ NO DAMAGE

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 ■ CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32)/EN55011, FCC Part15 , CNS15936, GB/T 9254.1-2021 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS
3	RADIATION	BS EN/EN55032(CISPR32)/EN55011, FCC Part15 , CNS15936, GB/T 9254.1-2021 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS
4	E.S.D	BS EN/EN61000-4-2 Level 3, 15KV air; Level 2, 8KV contact	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	BS EN/EN 61000-4-4 INPUT : 1KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	BS EN/EN 61000-4-5 Level 3, 1KV/L-N	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			



■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																																
1	TEMPERATURE RISE TEST	MODEL : NGE65U24-P1J 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 28.3 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=40.2 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=28.3°C</th><th>HIGH AMBIENT Ta=40.2°C</th></tr><tr><td>1</td><td>R42</td><td>70.8°C</td><td>81.0°C</td></tr><tr><td>2</td><td>U3</td><td>66.9°C</td><td>77.2°C</td></tr><tr><td>3</td><td>Q1</td><td>75.1°C</td><td>85.6°C</td></tr><tr><td>4</td><td>D42</td><td>70.3°C</td><td>80.3°C</td></tr><tr><td>5</td><td>U2</td><td>66.4°C</td><td>76.6°C</td></tr><tr><td>6</td><td>U1</td><td>59.5°C</td><td>70.2°C</td></tr><tr><td>7</td><td>Q100</td><td>74.8°C</td><td>85.6°C</td></tr><tr><td>8</td><td>C101</td><td>78.1°C</td><td>88.7°C</td></tr><tr><td>9</td><td>R101</td><td>80.2°C</td><td>90.7°C</td></tr><tr><td>10</td><td>U101</td><td>76.4°C</td><td>86.9°C</td></tr><tr><td>11</td><td>C105</td><td>66.9°C</td><td>77.2°C</td></tr><tr><td>12</td><td>C40</td><td>61.4°C</td><td>71.6°C</td></tr><tr><td>13</td><td>C106</td><td>62.4°C</td><td>72.6°C</td></tr><tr><td>14</td><td>C5</td><td>68.2°C</td><td>78.2°C</td></tr><tr><td>15</td><td>BD1</td><td>67.7°C</td><td>77.8°C</td></tr><tr><td>16</td><td>RTH2</td><td>73.0°C</td><td>82.1°C</td></tr><tr><td>17</td><td>LF2</td><td>67.2°C</td><td>77.5°C</td></tr><tr><td>18</td><td>C1</td><td>56.0°C</td><td>66.6°C</td></tr><tr><td>19</td><td>ZNR1</td><td>57.3°C</td><td>67.8°C</td></tr><tr><td>20</td><td>LF1</td><td>56.2°C</td><td>66.7°C</td></tr><tr><td>21</td><td>C8</td><td>74.1°C</td><td>84.2°C</td></tr><tr><td>22</td><td>R6</td><td>73.6°C</td><td>83.8°C</td></tr><tr><td>23</td><td>D5</td><td>74.3°C</td><td>84.4°C</td></tr><tr><td>24</td><td>R40</td><td>68.9°C</td><td>79.1°C</td></tr><tr><td>25</td><td>T1coil</td><td>75.7°C</td><td>85.9°C</td></tr><tr><td>26</td><td>T1core</td><td>73.3°C</td><td>83.3°C</td></tr><tr><td>27</td><td>C5</td><td>68.3°C</td><td>78.3°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=28.3°C	HIGH AMBIENT Ta=40.2°C	1	R42	70.8°C	81.0°C	2	U3	66.9°C	77.2°C	3	Q1	75.1°C	85.6°C	4	D42	70.3°C	80.3°C	5	U2	66.4°C	76.6°C	6	U1	59.5°C	70.2°C	7	Q100	74.8°C	85.6°C	8	C101	78.1°C	88.7°C	9	R101	80.2°C	90.7°C	10	U101	76.4°C	86.9°C	11	C105	66.9°C	77.2°C	12	C40	61.4°C	71.6°C	13	C106	62.4°C	72.6°C	14	C5	68.2°C	78.2°C	15	BD1	67.7°C	77.8°C	16	RTH2	73.0°C	82.1°C	17	LF2	67.2°C	77.5°C	18	C1	56.0°C	66.6°C	19	ZNR1	57.3°C	67.8°C	20	LF1	56.2°C	66.7°C	21	C8	74.1°C	84.2°C	22	R6	73.6°C	83.8°C	23	D5	74.3°C	84.4°C	24	R40	68.9°C	79.1°C	25	T1coil	75.7°C	85.9°C	26	T1core	73.3°C	83.3°C	27	C5	68.3°C	78.3°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 127%LOAD Ta : 25°C	TEST : OK																																																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100%LOAD Ta= -35°C	TEST : OK																																																																																																																



65W AC-DC Reliable Wall-mounted
Interchangeable Type Green Adaptor

NGE65 series

4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 40°C/95 %R.H NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 40°C HUMIDITY= 95 %R.H	TEST : OK
5	TEMPERATURE COEFFICIENT	±0.03%/°C(0~40°C)	I/P : 230 VAC O/P : FULL LOAD	±0.0061%/°C(0~40°C)
6	STORAGE TEMPERATURE TEST	-20~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC	
7	THERMAL SHOCK TEST	-30~40°C	1. Thermal shock Temperature : -35°C~ +45°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test	
8	VIBRATION TEST	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 25°C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta= 40°C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 40°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 40°C LIFE TIME		(1) 58017HRS (2) 22917.9HRS (3) 80699.8HRS (4) 207541.3HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 682.2 Khrs min. MIL-HDBK-217F (25°C) 5852.4 Khrs min.Telcordia TR/SR-332(Bellcore) (25°C)		
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Yuwei	Liutt	Wangdz

2020.10.1 TAG-QA-009