



Test Report: RST-7K5-380

7.5KW 3 ψ 4W Input With High Voltage Output

■ 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

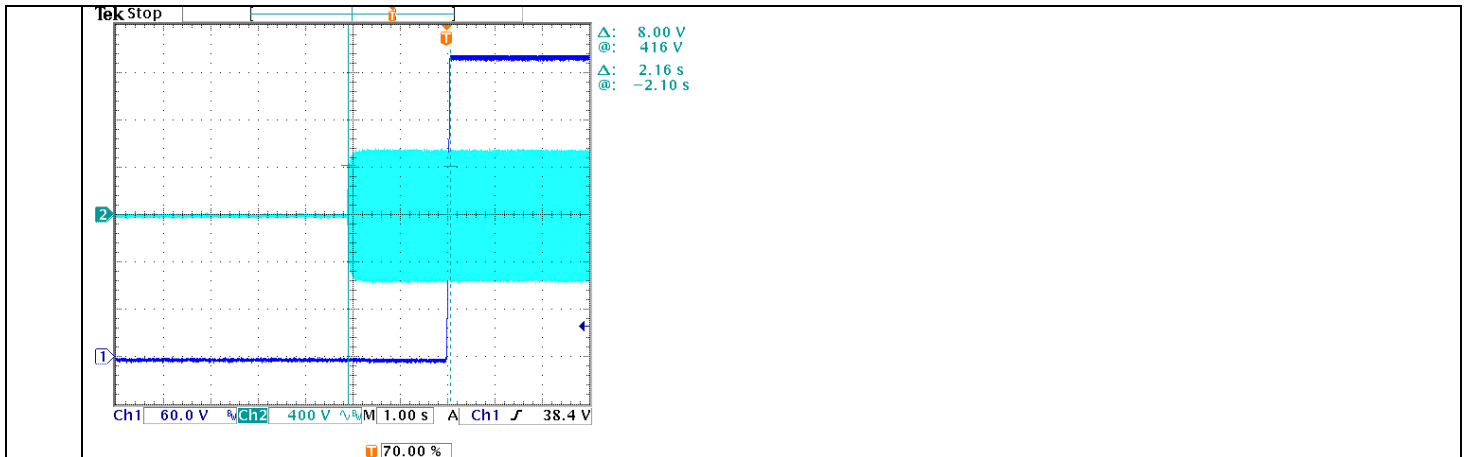
■ RELIABILITY TEST

ENVIRONMENT TEST

■ DESIGN VERIFY TEST

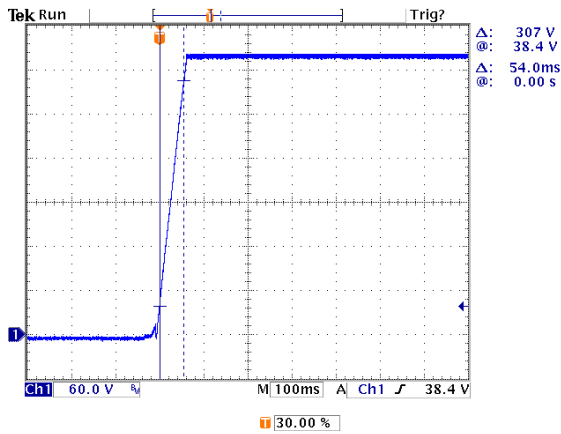
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1 : 260V~ 400 V	I/P : 230 VAC (Δ) O/P : MIN LOAD Ta : 25°C	242.71V~408.25V
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1 : 1%~ -1 %	I/P : 196VAC /305VAC (Δ) O/P : FULL/ MIN. LOAD Ta : 25°C	-0.26%~-0.64%
3	LINE REGULATION (Max)	V1 : 0.5%~ -0.5 %	I/P : 230VAC~ 305VAC (Δ) O/P : FULL LOAD Ta : 25°C	0%~0%
4	LOAD REGULATION(Max)	V1 : 0.5%~ -0.5 %	I/P : 230VAC (Δ) O/P ; FULL ~MIN LOAD Ta : 25°C	0.192%~-0.173%
5	OVER/UNDERSHOOT TEST	< \pm 10%	I/P : 230VAC (Δ) O/P : FULL LOAD Ta : 25°C	<10%
6	RIPPLE & NOISE(Max)	V1 : 4Vp-p	I/P : 230VAC (Δ) O/P : FULL LOAD Ta : 25°C	V1: 500mVp-p
<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>high frequency :</p> </div> <div style="width: 45%;"> <p>low frequency :</p> </div> </div>				
7	SET UP TIME(Max)	230VAC / 3000ms	I/P : 230 VAC(Δ) O/P : FULL LOAD Ta : 25°C	2160 ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>				



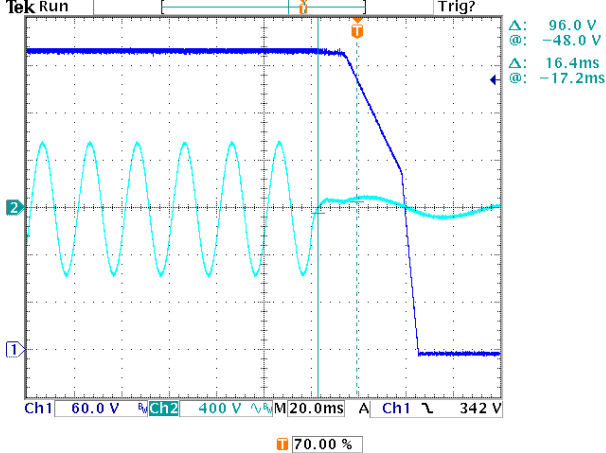
8	RISE TIME (Max)	230VAC/200ms	I/P : 230 VAC(Δ) O/P : FULL LOAD Ta : 25°C	54 ms
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INPUT=230VAC / 60HZ @ FULL LOAD
CH2 : Output Voltage

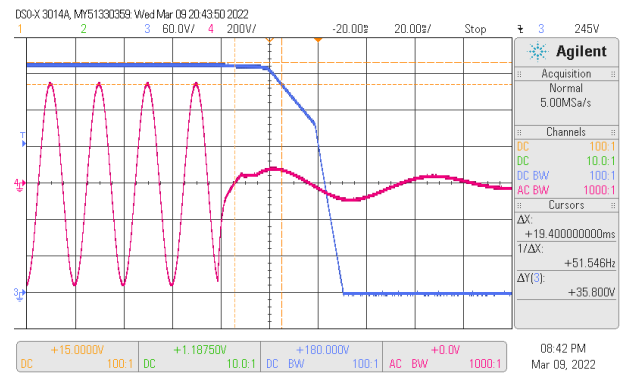


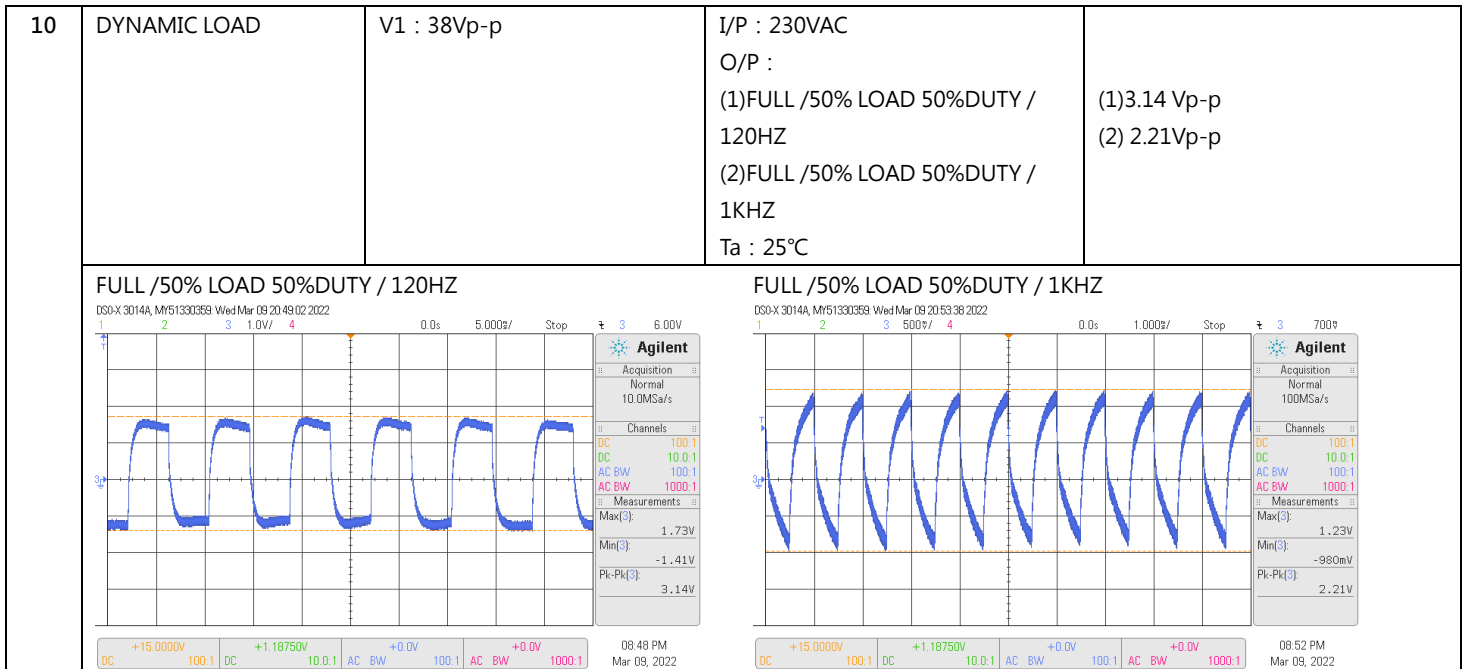
9	HOLD UP TIME (Typ.)	230VAC/10ms at full load 230VAC/16ms at 75% load	I/P : 230 VAC(Δ) O/P : FULL LOAD/75% LOAD Ta : 25°C	230VAC/16.4ms / full load 230VAC/ 19.4ms/ 75% load
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INPUT=230VAC/60HZ @ FULL LOAD
CH1 : Output Voltage CH2 : AC Input Voltage



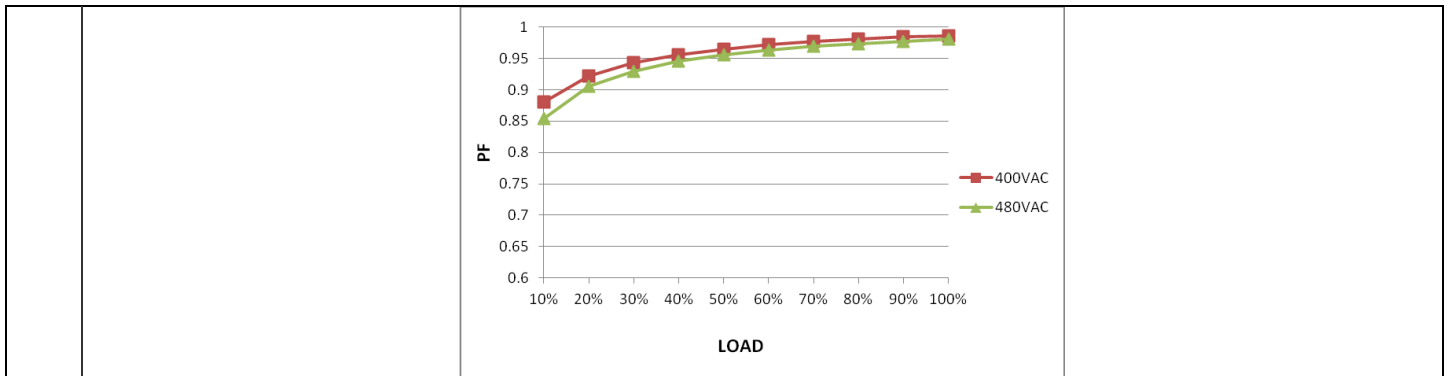
INPUT=230VAC/60HZ @ 75% LOAD
CH3 : Output Voltage CH4 : AC Input Voltage





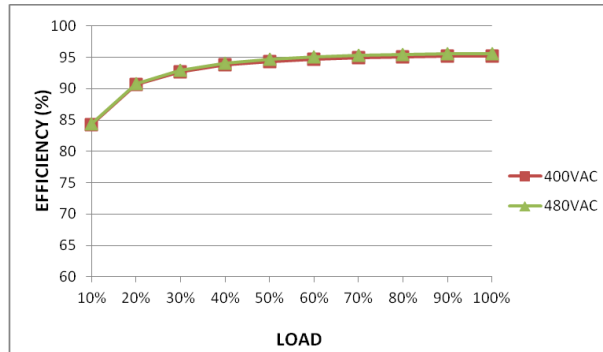
INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	196VAC~305VAC (Δ)	I/P : TESTING O/P : FULL LOAD Ta : 25°C	188.7V~305V
			I/P : LOW-LINE 196-3V=193V HIGH-LINE 305+10V=315 V O/P : FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON : 30 Sec OFF : 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST : PASS
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P : 196 VAC ~305VAC (Δ) O/P : FULL~MIN LOAD Ta : 25°C	TEST : PASS
3	INPUT CURRENT (Typ.)	Y : 400V/ 13 A Δ : 230V/22.5A	I/P : 400VAC(Y)/230 VAC (Δ) O/P : FULL LOAD Ta : 25°C	Y : 11.73A Δ : 20.32A
4	LEAKAGE CURRENT	< 10mA / 305VAC (Δ) < 3.5mA /530VAC (Y)	I/P : 305VAC (Δ) / 530V (Y) O/P : No LOAD Ta : 25°C	L1-FG : 9.4mA (Δ) / 1mA(Y) L2-FG : 9.4mA (Δ) / 1mA(Y) L3-FG : 9.4mA (Δ) / 1mA(Y)
5	POWER FACTOR (Typ.)	0.98 / 230VAC 0.97/ 277VAC	I/P : 230 VAC/277VAC (Δ) O/P : FULL LOAD Ta : 25°C	PF=0.984/230VAC PF=0.98/277VAC
	P.F vs LOAD			



6	EFFICIENCY(Typ.)	95%	I/P : 230 VAC (Δ) O/P : 100% LOAD Ta : 25°C	95.6%
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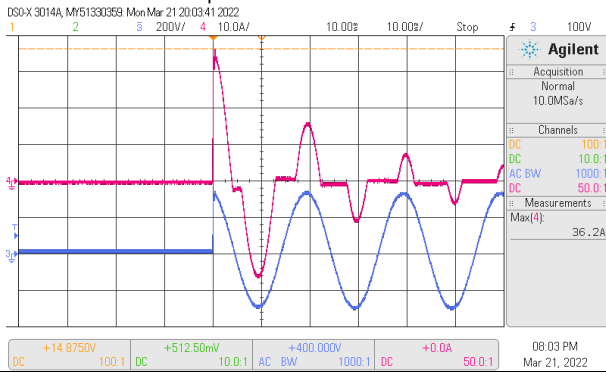
EFFICIENCY vs LOAD



7	INRUSH CURRENT(Typ.)	Y : 400V/50A Δ : 230V/75A COLD START	I/P : 400VAC (Y) I/P : 230 VAC (Δ) O/P : FULL LOAD Ta : 25°C	Y : 36.2A Δ : 50.7A T50=5.2ms (Δ)
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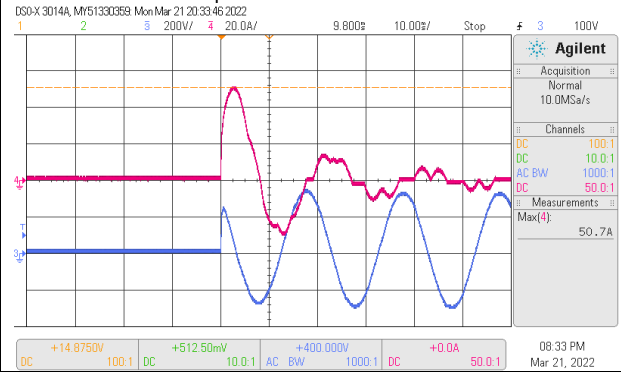
INPUT=230VAC/50HZ @ FULL LOAD

CH3 : VAC CH4 : Input current



INPUT=230VAC/50HZ @ FULL LOAD

CH3 : VAC CH4 : Input current



PROTECTION FUNCTION TEST

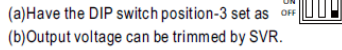
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	100%~107% (196VAC~305VAC) Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover	I/P : 305VAC(Δ) I/P : 230VAC I/P : 196VAC O/P : TESTING Ta : 25°C	305V : 104% . 230V : 104% 196V : 104% Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover
2	OVER VOLTAGE PROTECTION	420 V~480 V Protection type : Shut down O/P voltage,re-power on to recover	I/P : 305VAC(Δ) I/P : 230VAC I/P : 196VAC O/P : MIN LOAD Ta : 25°C	305V : 449V 230V : 445V 196V : 449V Protection type : Shut down O/P voltage,re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down O/P voltage, recovers automatically after temperature goes down	I/P : 305VAC(Δ) I/P : 196VAC O/P : FULL LOAD	O.T.P. Active Protection type : Shut down O/P voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover	I/P : 305VAC(Δ) I/P : 196VAC O/P : FULL LOAD Ta : 25°C	305V : PASS 196V : PASS Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT								
1	AUXILIARY POWER (AUX)	I/P : 230 VAC(Δ) O/P : FULL LOAD Ta : 25°C Test Result : PASS										
		<table border="1"> <thead> <tr> <th>AUX</th> <th>TOLERANCE</th> <th>RIPPLE</th> <th>TEST RESULT</th> </tr> </thead> <tbody> <tr> <td>12V / 0.1A</td> <td>10.8~13.2 V</td> <td>150mVp-p</td> <td>11.896V/137mv</td> </tr> </tbody> </table>			AUX	TOLERANCE	RIPPLE	TEST RESULT	12V / 0.1A	10.8~13.2 V	150mVp-p	11.896V/137mv
AUX	TOLERANCE	RIPPLE	TEST RESULT									
12V / 0.1A	10.8~13.2 V	150mVp-p	11.896V/137mv									
2	REMOTE ON/OFF CONTROL	I/P : 230 VAC(Δ) O/P : FULL LOAD Ta : 25°C Test Result : PASS										
		<table border="1"> <thead> <tr> <th>Between ON/OFF and +12V-AUX</th> <th>Power Supply Status</th> </tr> </thead> <tbody> <tr> <td>SW SHORT(10.8 ~ 13.2V)</td> <td>ON</td> </tr> <tr> <td>SW OPEN(-0.5 ~ 0.5V)</td> <td>OFF</td> </tr> </tbody> </table>			Between ON/OFF and +12V-AUX	Power Supply Status	SW SHORT(10.8 ~ 13.2V)	ON	SW OPEN(-0.5 ~ 0.5V)	OFF		
Between ON/OFF and +12V-AUX	Power Supply Status											
SW SHORT(10.8 ~ 13.2V)	ON											
SW OPEN(-0.5 ~ 0.5V)	OFF											

3 OUTPUT VOLTAGE PROGRAMMABLE(PV)

1. Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)
 (1) by potentiometer (SVR)



(a) Have the DIP switch position-3 set as

(b) Output voltage can be trimmed by SVR.

(2) by Output Voltage Programming



(a) Have the DIP switch position-3 set as

(b) The output voltage can be trimmed to 1~120% by applying EXTERNAL VOLTAGE between PV+ and PV- on CN86 or CN87.

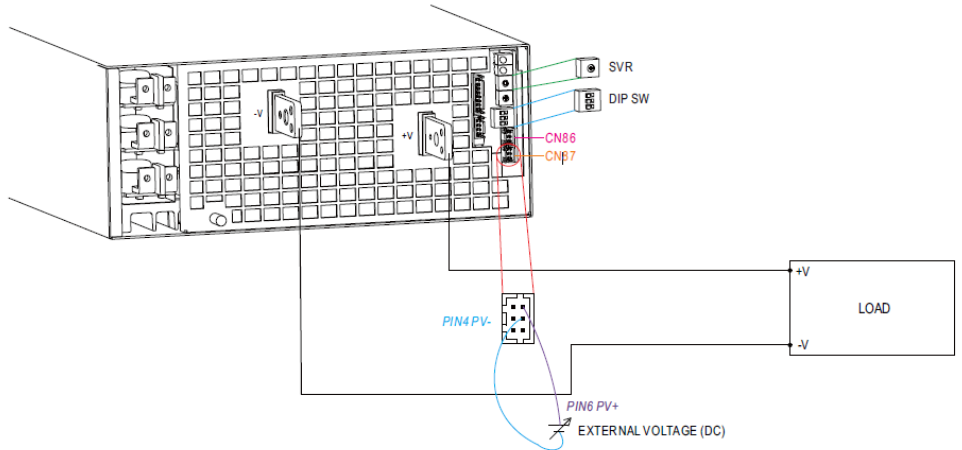
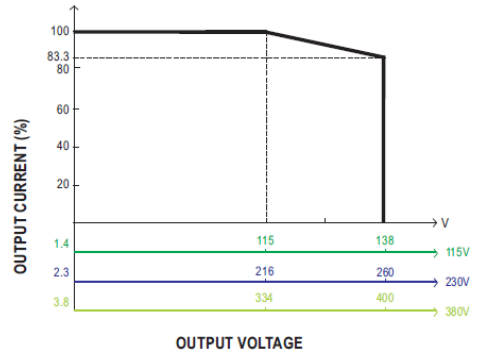
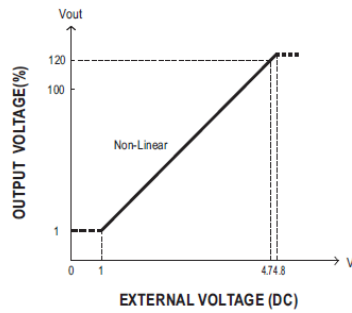


Fig 1.1



© The rated current should change with the Output Voltage Programming accordingly.


I/P : 230 VAC(Δ)
 O/P : FULL LOAD
 Ta : 25°C
 TEST RESULT :

	PV	1V	4.7V
MODEL			
SPEC		3.8V±2.6V	400V±10.9V
Vout		3.808V	400V


4	OUTPUT PROGRAMMABLE (PC)	CURRENT
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2.Constant Current Programming (or, PC / remote current programming / dynamic current trim)

(1)Default Overload Protection(OLP) 100~105% of rated current

(a)Have the DIP switch position-2 set as 

(b)Output current is set default value.

(2)by Constant Current Level Programming 

(a)Have the DIP switch position-2 set as

(b)The constant current level can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE between PC+ and PC- on CN86 or CN87.

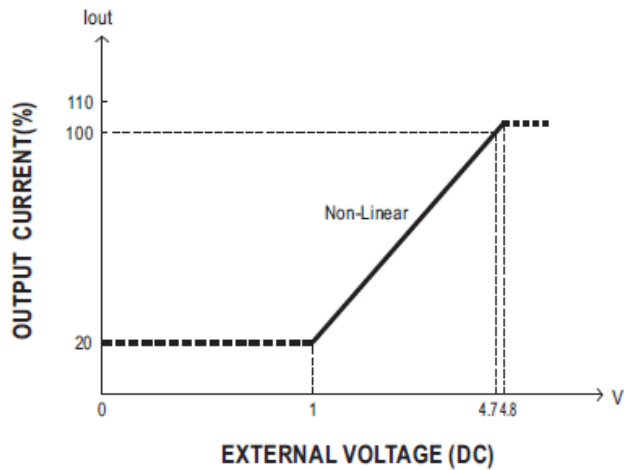
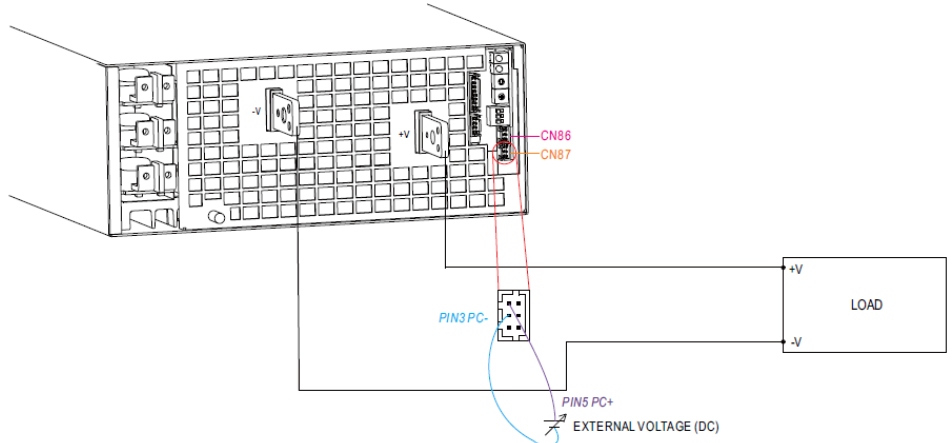


Fig 2.2

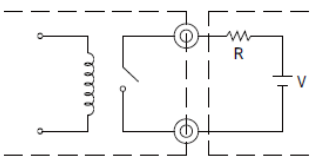
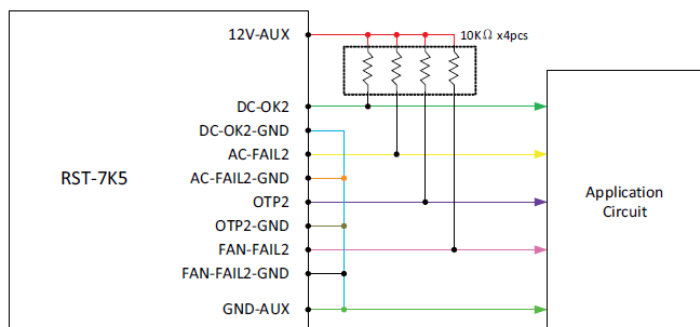
Output will shut down after O/P voltage is below < 80% of Vset for 6 sec, re-power on to recover.



I/P : 230 VAC(Δ)

O/P : TESTING

Ta : 25°C

ADJ V	1V	4.7V
SPEC	20%±10%	100%±10%
TEST	21.6%	99.8%

5	Alarm Signal Output	<p>5. Alarm Signal Output</p> <p>※ There are 4 alarm signals on CN99, and each signal can select two types of output circuit.</p> <p>(1) Relay contact output (OTP1, OTP1-GND) ; (DC-OK1, DC-OK1-GND) ; (AC-FAIL1-GND, AC-FAIL1) ; (FAN-FAIL1-GND, FAN-FAIL1)) Normally open contact. "Short" when the alarm arises. Relay contact rating(maximum) is 30V/1A resistive.</p>  <p style="text-align: center;">Fig 5.1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DC-OK1</td> <td>Alarm signal of DC-OK. Normally open contact. "Short" when the PSU turns on. Relay contact rating(maximum) is 30V/1A resistive.</td> </tr> <tr> <td>OTP1</td> <td>Alarm signal of OTP. Normally open contact. "Short" when the PSU over temperature protection occurs. Relay contact rating(maximum) is 30V/1A resistive.</td> </tr> <tr> <td>AC_Fail_1</td> <td>Alarm signal of AC-fail. Normally open contact. "Short" when the PSU input voltage is too low. Relay contact rating(maximum) is 30V/1A resistive.</td> </tr> <tr> <td>FAN_Fail_1</td> <td>Alarm signal of fan fail. Normally open contact. "Short" when the internal fan fails. 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The maximum sink current is 10mA and the maximum external voltage is 20V (there is a built-in 24V zener diode in inner circuitry).</p>  <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>DC-OK2</td> <td>Alarm signal of DC-OK. Open collector signal. Low when the PSU turns on. The maximum sink current is 10mA and the maximum external voltage is 20V.</td> </tr> <tr> <td>OTP2</td> <td>Alarm signal of OTP. Open collector signal. Low when the PSU over temperature protection occurs. The maximum sink current is 10mA and the maximum external voltage is 20V.</td> </tr> <tr> <td>AC-FAIL2</td> <td>Alarm signal of AC fail. Open collector signal. Low when the PSU input voltage is too low. The maximum sink current is 10mA and the maximum external voltage is 20V.</td> </tr> <tr> <td>FAN-FAIL2</td> <td>Alarm signal of fan fail. Open collector signal. Low when the internal fan fails. 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		Status				
		OFF	HIGH	LOW	LOW (184VAC)	LOW
		ON	LOW	HIGH	HIGH (188VAC)	HIGH
6	Select Overload Protection (OLP) Mode	<p>3. Select Overload Protection (OLP) Mode</p> <p>(1) Continuous Constant Current mode Have the DIPswitch position-1 set as , and RST-7K5 will work in continuous constant current mode when the output is overloaded and the output voltage is greater than 50% of the rated output voltage.</p> <p>(2) Delay Shutdown mode Have the DIPswitch position-1 set as , and RST-7K5 will shut down after 5 seconds of constant current operation, when the output is overloaded or short-circuited.</p> <p>I/P: 230 VAC O/P: 260V Load : CV Mode 260-2V Ta: 25°C Test Result : PASS</p>				
7	CURRENT SHARING	CURRENT SHARING TOLERANCE <±10%	I/P : 230 VAC O/P : 100/50% LOAD Ta : 25°C	O/P : 100% PSU1 : 21.52 A PSU2 : 22.31 A PSU3 : 22.17 A PSU4 : 22.76 A O/P : 50% PSU1 : 10.78 A PSU2 : 11.39 A PSU3 : 11.22 A PSU4 : 11.37 A		

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																						
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q333 Rated : 35A/650V VGS : -10V~+22V Q334 Rated : 35A/650V VGS : -10V~+22V	AC ON/OFF I/P : High-Line +3V =308V VDS : VO : 380V 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%→160% Load. Ta:25°C	<table border="0"> <tr> <td><u>Q333</u></td> <td><u>Q334</u></td> </tr> <tr> <td>AC=308V</td> <td>AC=308V</td> </tr> <tr> <td>VO : 380V</td> <td>VO : 380V</td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1) 526V</td> <td>(1) 458V</td> </tr> <tr> <td>(2) 647V</td> <td>(2) 498V</td> </tr> <tr> <td>(3) 534V</td> <td>(3) 474V</td> </tr> <tr> <td>(4) 530V</td> <td>(4) 466V</td> </tr> <tr> <td>(5) 530V</td> <td>(5) 458V</td> </tr> <tr> <td>(6) 530V</td> <td>(6) 458V</td> </tr> <tr> <td>(7) 554V</td> <td>(7) 493V</td> </tr> </table>	<u>Q333</u>	<u>Q334</u>	AC=308V	AC=308V	VO : 380V	VO : 380V	VDS:	VDS:	(1) 526V	(1) 458V	(2) 647V	(2) 498V	(3) 534V	(3) 474V	(4) 530V	(4) 466V	(5) 530V	(5) 458V	(6) 530V	(6) 458V	(7) 554V	(7) 493V
<u>Q333</u>	<u>Q334</u>																									
AC=308V	AC=308V																									
VO : 380V	VO : 380V																									
VDS:	VDS:																									
(1) 526V	(1) 458V																									
(2) 647V	(2) 498V																									
(3) 534V	(3) 474V																									
(4) 530V	(4) 466V																									
(5) 530V	(5) 458V																									
(6) 530V	(6) 458V																									
(7) 554V	(7) 493V																									
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q100 Rated : 35A/650V VGS : -8V~+19V	I/P : High-Line +3V =308V AC ON/OFF VO : 380V O/P :	<table border="0"> <tr> <td><u>Q100</u></td> </tr> <tr> <td>AC=308V</td> </tr> <tr> <td>VO : 380V</td> </tr> <tr> <td>VDS :</td> </tr> </table>	<u>Q100</u>	AC=308V	VO : 380V	VDS :																		
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			<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. Ta : 25°C</p>	<p>(1) 577V (2) 573V (3) 549V (4) 561V (5) 553V (6) 501V (7) 630V</p>
3	P.F.C DIODE	D108 Rated : 20A/650V	<p>I/P : High-Line +3V =308V AC ON/OFF <u>VO : 380V</u> O/P : (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz Ta : 25°C</p>	<p><u>D108</u> <u>VO : 380V</u> (1) 473V (2) 473V (3) 473V (4) 473V</p>
4	Diode Peak Voltage	D711 Rated : 25A/1700V	<p>AC ON/OFF I/P : High-Line +3V =308V <u>VO : 380V</u> 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%→160% Load. (8).NO LOAD Ta : 25°C</p>	<p>D711 : <u>VO : 380V</u> VDS : (1) 1.31KV (2) 1.31KV (3) 1.31KV (4) 1.32KV (5) 1.32KV (6) 1.38KV (7) 1.38KV (8) 1.34KV</p>
5	Input Capacitor Voltage	C300~C302 Rated : 390uF/450V 105°C/MXK Series Surge Voltage: 500V	<p>I/P : High-Line +3V =308V <u>VO : 380V</u> 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</p>	<p><u>VO : 380V</u> (1) 449V (2) 449V (3) 453V (4) 441V</p>

6	Control IC Voltage Test	MCU IC(control IC) U901 Rated : 2V~3.6V	AC ON/OFF I/P : High-Line +3V =308V VO : 380V O/P : (1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P. (5) NO LOAD VRmin(LOW LINE) Ta : 25°C	U901 : VO : 380V (1) 3.300V (2) 3.307V (3) 3.307V (4) 3.307V (5) 3.305V
7	TOP SWITCHING STAND BY POWER	U601 Rated : 4 A/800V	AC ON/OFF VO : 380V I/P : High-Line +3V =308V O/P : (1)Full Load (2)Remote On/Off I/P : Low-Line -3V =227V O/P : (1)Full Load (2)Remote On/Off Ta : 25°C	U601 VO : 380V (1) 630V (2) 642V (1) 638V (2) 638V

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P : 4.3KVDC/min I/P-FG : 2.8KVDC/min O/P-FG : 2.8KVDC/min	I/P-O/P : 4.73KVDC/min I/P-FG : 3.36KVDC /min O/P-FG : 3.36KVDC/min Ta : 25°C	I/P-O/P : 3uA I/P-FG : 2uA O/P-FG : 2uA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P : 500VDC>100M Ω I/P-FG : 500VDC>100M Ω O/P-FG : 500VDC>100M Ω	I/P-O/P : 500 VDC I/P-FG : 500 VDC O/P-FG : 500 VDC Ta : 25°C	I/P-O/P : 2.13G Ω I/P-FG : 3.20G Ω O/P-FG : 2.37G Ω NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 m Ω	40A / 2min Ta : 25°C	26m Ω

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN61000-3-2	I/P : 230VAC/50HZ O/P : FULL LOAD Ta : 25°C	PASS
2	CONDUCTIED	BS EN55032(CISPR32) / BS EN/EN55011(CISPR11) CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS

3	RADIATION	BS EN55032(CISPR32) / BS EN/EN55011(CISPR11) CLASS A	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS
4	E.S.D	EN61000-4-2 Level 3, 8KV air ; Level 2, 4KV contact	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A PASS
5	E.F.T	EN61000-4-4 Level 3	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	PASS
6	SURGE	IEC61000-4-5 Level 4, 4KV/Line-Earth ; Level 3, 2KV Line- Line	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A PASS
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 : RST-7K5-380 1. ROOM AMBIENT BURN-IN : 1 HRS I/P : 230VAC (Δ) O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 1 HRS I/P : 230VAC (Δ) O/P : FULL LOAD Ta= 45 °C																																																						
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25 °C</th> <th>HIGH AMBIENT Ta= 45 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>A-board-Q151</td><td>83.8</td><td>101.2</td></tr> <tr><td>2</td><td>A-board-D153</td><td>86.9</td><td>105.5</td></tr> <tr><td>3</td><td>A-board-Q100</td><td>76.9</td><td>94.5</td></tr> <tr><td>4</td><td>A-board-D108</td><td>81.3</td><td>99.7</td></tr> <tr><td>5</td><td>A-board-BD100</td><td>71.4</td><td>89.4</td></tr> <tr><td>6</td><td>A-board-BD151</td><td>83.7</td><td>101.8</td></tr> <tr><td>7</td><td>A-board-L151</td><td>38.2</td><td>57.1</td></tr> <tr><td>8</td><td>D-board-Q332</td><td>59.1</td><td>78.1</td></tr> <tr><td>9</td><td>D-board-Q334</td><td>52.7</td><td>71.4</td></tr> <tr><td>10</td><td>D-board-Q384</td><td>59.1</td><td>77.9</td></tr> <tr><td>11</td><td>D-board-Q432</td><td>59.7</td><td>78.5</td></tr> <tr><td>12</td><td>D-board-U401</td><td>53.7</td><td>72.4</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 45 °C	1	A-board-Q151	83.8	101.2	2	A-board-D153	86.9	105.5	3	A-board-Q100	76.9	94.5	4	A-board-D108	81.3	99.7	5	A-board-BD100	71.4	89.4	6	A-board-BD151	83.7	101.8	7	A-board-L151	38.2	57.1	8	D-board-Q332	59.1	78.1	9	D-board-Q334	52.7	71.4	10	D-board-Q384	59.1	77.9	11	D-board-Q432	59.7	78.5	12	D-board-U401	53.7	72.4
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			13	F-board-RG61	31.2	49.3
			14	F-board-T602	36.5	54.7
			15	F-board-U601	56.1	74.6
			16	F-board-T601	39.1	57.1
			17	F-board-Q671	34.9	52.5
			18	F-board-Q621	59.1	75.6
			19	G-board-D302	52.1	71.6
			20	G-board-L301	65.2	85.0
			21	G-board-C302	39.4	58.2
			22	H-board-C714	26.7	48.6
			23	H-board-R712	38.0	56.8
			24	H-board-T702	56.0	75.6
			25	I-board-RI11	34.8	52.5
			26	I-board-D713	63.9	82.1
			27	TSW1	40.5	59.1
			28	RTH10	41.3	61.8
			29	RTH9	27.3	45.1
			30	D-board-Q432	52.7	71.9
			31	D-board-Q431	55.0	73.9
			32	D-board-Q384	59.4	78.9
			33	D-board-Q334	53.5	72.7
			34	TSW1	42.9	62.1
			35	RTH10	46.5	65.4
			36	A-board-Q201	90.3	109.5
			37	A-board-BD201	59.9	78.4
			38	J-board-D714	25.8	31.1
			39	G-board-C302	39.5	59.6
			40	D-board-Q432	52.7	71.9
			41	D-board-Q431	55.0	73.9
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC(Δ) O/P : 101% LOAD Ta : 25°C		TEST : OK	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 305VAC/230VAC(Δ) O/P : 100%/LOAD Ta= -35 °C		TEST : OK	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C/95 %R.H NO DAMAGE	I/P : 230 VAC(Δ) O/P : FULL LOAD Ta= 45 °C HUMIDITY= 95 %R.H		TEST : OK	
5	TEMPERATURE COEFFICIENT	\pm 0.03 %/°C(0~45°C)	I/P : 230 VAC(Δ) O/P : FULL LOAD		\pm 0.009 %/°C(0~45°C)	
6	STORAGE TEMPERATURE TEST	-40~85°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	-30~45°C	1. Thermal shock Temperature : -35°C~ +50°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 C714 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= 45 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 45 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 45 °C LIFE TIME	(1) 3341270HRS (2) 732244HRS (3) 777945HRS (4) 872345HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 234.5K hrs min. Telcordia SR-332 (Bellcore) ; 27.1K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	DANIEL GAO	SANFORD SU	VINCENT TSENG

2020.10.1 TAG-QA-009