



Test Report: XTR-960-36

960W AC/DC 3Ø Input Ultra Slim Industrial DIN Rail Power

■ 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

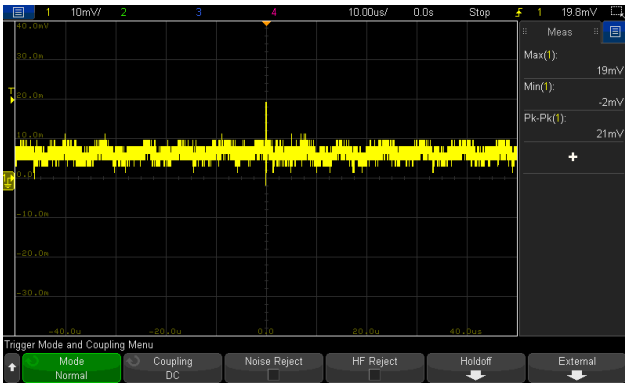
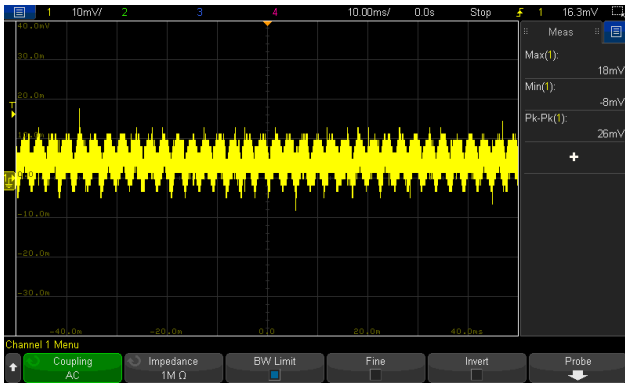
E.M.C. Test

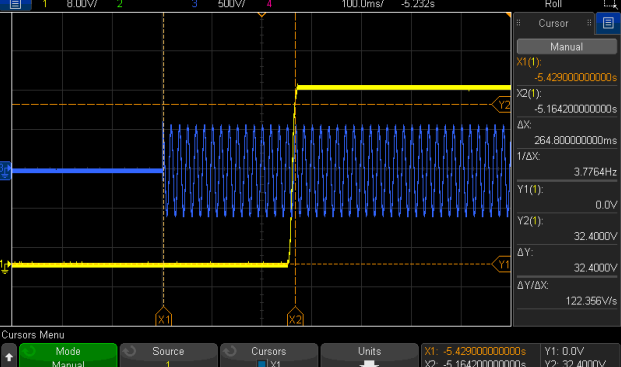
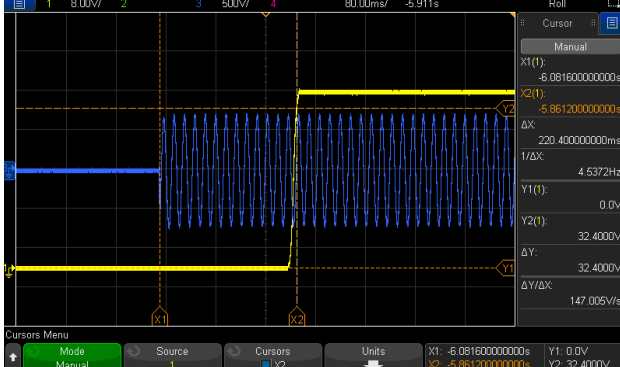
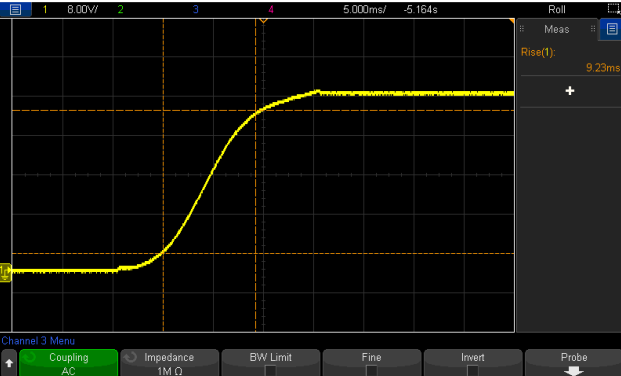
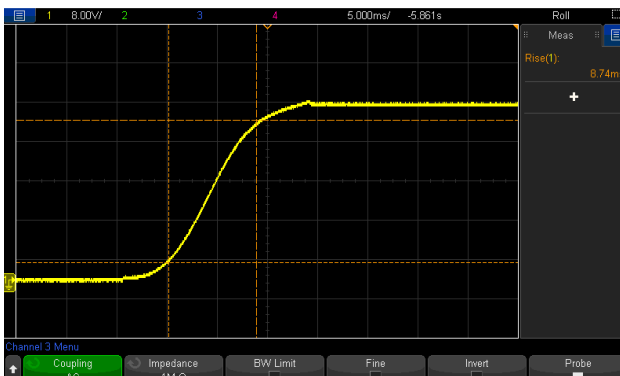
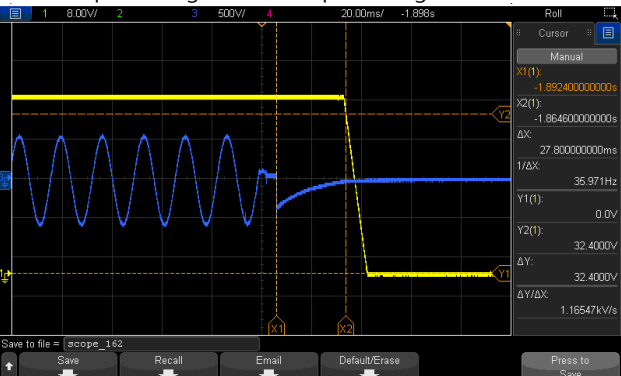
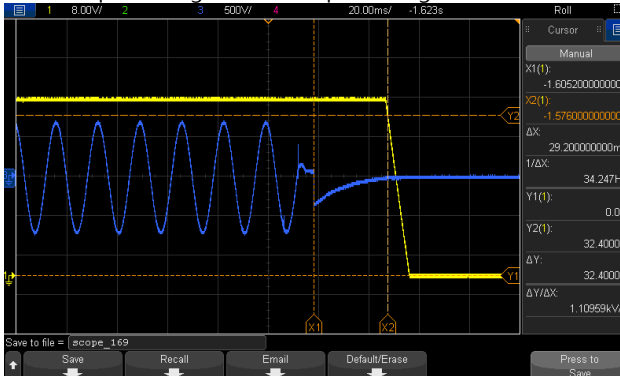
■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST

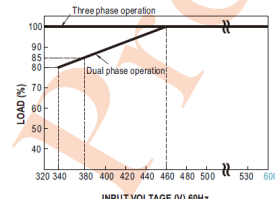
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 36V~42V	I/P : 400 VAC I/P : 500 VAC O/P : MIN LOAD Ta : 25°C	34.788V~43.36V/400VAC 34.789V~43.35V/500VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1% ~ +1%	I/P: 320VAC ~ 600VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.178% ~ 0%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 320VAC~ 600VAC O/P:FULL LOAD Ta:25°C	V1: 0% ~ 0%
4	LOAD REGULATION	V1: -1% ~ +1%	I/P: 400VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.095 % ~ 0.092%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 400VAC O/P:FULL LOAD/NO LOAD Ta:25°C	1.70% →FULL LOAD 2.80% →NO LOAD
6	RIPPLE & NOISE (Max)	V1: 150mVp-p	I/P:400VAC O/P: FULL LOAD Ta:25°C	V1: 21mVp-p / high frequency 26mVp-p / low frequency
high frequency :		low frequency :		
				
7	SET UP TIME (Max)	400VAC/800ms 500VAC/600ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	264.8ms/400VAC 220.4ms/500VAC
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: ACInput Voltage		INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: ACInput Voltage		

				
8	RISE TIME (Max)	400VAC/60ms 500VAC/60ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	9.23ms/400VAC 8.74ms/500VAC
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage		INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage		
				
9	HOLD UP TIME (Typ.)	400VAC/20ms 500VAC/20ms	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	27.8ms/400VAC 29.2ms/500VAC
INPUT=400VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: ACInput Voltage		INPUT=500VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: ACInput Voltage		
				
10	DYNAMIC LOAD	V1: 3600mVp-p	I/P: 400VAC O/P: (1) FULL / MIN LOAD 50%DUTY / 120HZ (2) FULL / MIN LOAD 50%DUTY / 1KHZ Ta:25°C	1510mVp-p 760mVp-p

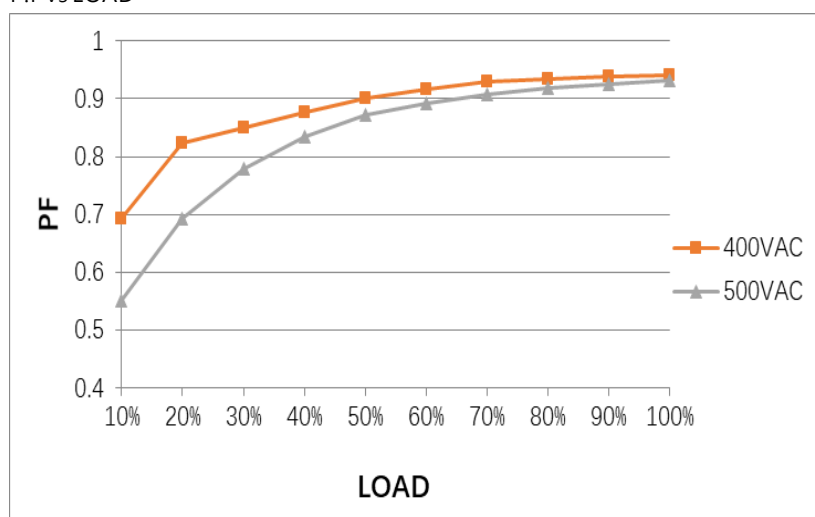
	FULL / MIN LOAD 50%DUTY / 120HZ	FULL / MIN LOAD 50%DUTY / 1KHZ
11	PEAK LOAD 开机&循环	1) PEAK LOAD@5S 2) PEAK LOAD 循环 For example (20V model): $V_{in} = 400V$ (50% duty) $P_{in} = 960W$ $P_{out} = 960W$ $T_a = 25^{\circ}C$ $P_{in} = 960W$ $P_{out} = 960W$
		I/P: 600VAC I/P: 400VAC I/P: 320VAC O/P: PEAK LOAD
		TEST : I/P: 600VAC <u>OK</u> I/P: 400VAC <u>OK</u> I/P: 320VAC <u>OK</u>

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT		
1	INPUT VOLTAGE RANGE	Three-Phase 320VAC~600VAC (Dual phase operation possible) 450VDC~800VDC/ FULL LOAD ■ Output derating VS input voltage 	(1) I/P: TESTING O/P: FULL LOAD Dual phase DCInput : (2) I/P: DC TESTING O/P: FULL LOAD Ta:25°C	(1) 295.76Vac~600Vac/ FULL LOAD Dual phase DCInput : (2) 411.5 Vdc~800Vdc/FULL LOAD		
			I/P: LOW-LINE-3V=317V HIGH-LINE+10V=610V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST: OK		
			Dual phase operation : I/P: TESTING O/P: FULL LOAD / 90% LOAD / 85% LOAD/80% LOAD	322.05Vac~600Vac/ FULL LOAD 321.33Vac~600Vac/ 90% LOAD 321.33Vac~600Vac/ 85% LOAD 320.58Vac~600Vac/ 80% LOAD		
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 320VAC~ 600VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK		
3	INPUT CURRENT (Typ.)	400V/ 2A 500V/ 1.4A	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD	TEST:		
				<table><tr><td></td><td>400VAC</td><td>500VAC</td></tr><tr><td>L1</td><td>1.5253A</td><td>1.2327A</td></tr></table>		400VAC
	400VAC	500VAC				
L1	1.5253A	1.2327A				

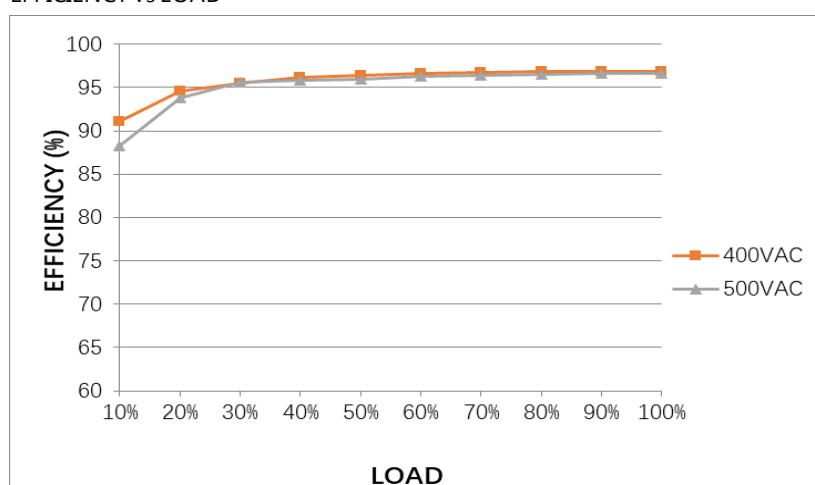
			Ta : 25°C	<table><tr><td>L2</td><td>1.5251A</td><td>1.2318A</td></tr><tr><td>L3</td><td>1.5260A</td><td>1.2328A</td></tr></table>	L2	1.5251A	1.2318A	L3	1.5260A	1.2328A						
L2	1.5251A	1.2318A														
L3	1.5260A	1.2328A														
4	LEAKAGE CURRENT	< 3.5mA / 530 VAC	I/P : 530 VAC/60Hz O/P : Min LOAD Ta : 25°C	L1,L2,L3-FG : 1.174mA(Peak)→62368												
5	NO LOAD CONSUMPTION	Remote Power OFF: 3.1W/400Vac Remote Power ON: 6.5W/400Vac	I/P : 400 VAC O/P : NO LOAD Ta : 25°C	2.326W/400Vac→ Remote Power OFF 4.0318W/400Vac→ Remote Power ON												
6	POWER FACTOR (Typ.)	PF=0.92 /400VAC PF=0.92 /500VAC	I/P : 400 VAC I/P : 500 VAC O/P : FULL LOAD Ta : 25°C	TEST: <table><tr><td></td><td>400VAC</td><td>500VAC</td></tr><tr><td>L1</td><td>0.938</td><td>0.931</td></tr><tr><td>L2</td><td>0.9388</td><td>0.9311</td></tr><tr><td>L3</td><td>0.9387</td><td>0.9309</td></tr></table>		400VAC	500VAC	L1	0.938	0.931	L2	0.9388	0.9311	L3	0.9387	0.9309
	400VAC	500VAC														
L1	0.938	0.931														
L2	0.9388	0.9311														
L3	0.9387	0.9309														

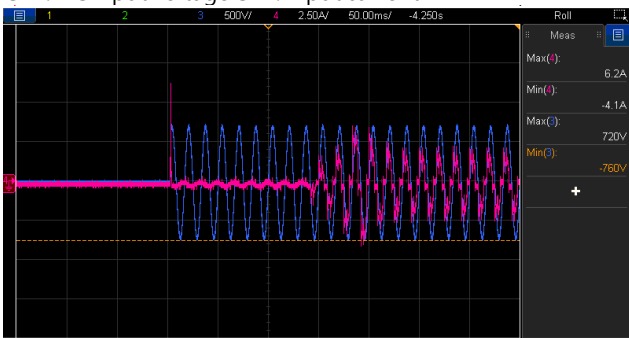
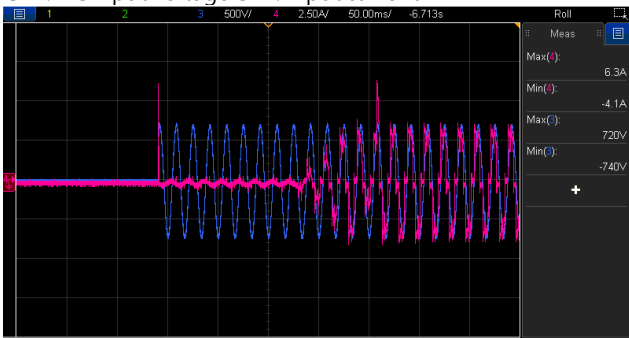
P.F vs LOAD



7	EFFICIENCY(Typ.)	95.5%	I/P: 400 VAC O/P: FULL LOAD Ta:25°C	96.61%
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EFFICIENCY vs LOAD



8	INRUSH CURRENT(Typ.)	500V/10A COLD START	I/P : 500 VAC O/P : FULL LOAD/PEAK LOAD Ta : 25°C	I = 6.20A/ 500VAC@ FULL LOAD I = 6.30A/ 500VAC@ PEAK LOAD T50= 5400us/500V@ FULL LOAD
INPUT=500VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current  INPUT=500VAC/50HZ @ PEAK LOAD CH1: AC Input Voltage CH4: Input current 				

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 200% rated power Protection type: 105%~200% rated output power for more than 5 sec then constant current limiting without shutdown at rate current when Vo=30%~100% Hiccup mode when Vo<30% rated voltage	I/P: 600VAC I/P: 400VAC I/P: 320VAC O/P: TESTING Ta:25°C	113.01%/600VAC 113.38%/400VAC 113.95%/320VAC Protection type: 105%~200% rated output power for more than 5 sec then constant current limiting without shutdown at rate current when Vo=30%~100% Hiccup mode when Vo<30% rated voltage
2	OVER VOLTAGE PROTECTION	43V~50V Protection type: Shut down o/p voltage, re-power on to recover	I/P: 600VAC I/P: 320VAC O/P: MIN LOAD Ta:25°C	47.30V/ 600VAC 47.20V/ 320VAC 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: 600VAC I/P: 320VAC O/P: FULL LOAD	TEST: <u>OK</u> 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: Hiccup mode when $V_o < 30\%$ rated voltage	I/P: 600VAC I/P: 320VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE OK Protection type: Hiccup mode when $V_o < 30\%$ rated voltage
5	Protection Against Reverse Voltages from the Load	Prevent PSU damage from Back Electro magnetic Force during deceleration of motor or inductive load	I/P: 400VAC O/P: TESTING Ta: 25°C	TEST : OK

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	DC OK RELAY CONTACT	Relay Contact Ratings (max.): 30Vdc/1A, 30Vac/0.5A resistive load	I/P: 400VAC O/P: FULL LOAD Ta: 25°C	TEST: <u>OK</u>
2	REMOTE CONTROL	Power ON: RC+ ~ RC- open or keep 2~5Vdc Power OFF: RC+ ~ RC- short or keep <0.5Vdc	I/P: 400VAC O/P: FULL LOAD Ta: 25°C	TEST: <u>OK</u>
3	PARALLEL	Up to 3840W (3+1), please refer to Function Manual for more details	I/P: TESTING O/P: TESTING LOAD Ta: 25°C	TEST: <u>OK</u>

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q2/Q3 Rated: 650V/68A	AC ON/OFF I/P: High-Line +3V = 603V VDS: 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/	Q3 Q2 VDS: VDS: (1) 460V (1) 478V (2) 553V (2) 546V (3) 464V (3) 470V (4) 464V (4) 470V (5) 460V (5) 470V (6) 448V (6) 470V (7) 520V (7) 530V (8) 508V (8) 541V

			Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7) 0%→400% Load. (8) Peak Load Ta:25°C		
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1/Q4 Rated: 1200V/36A	ACON/OFF I/P: High-Line +3V =603V VDS: 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) Peak Load Ta:25°C	Q1 VDS: (1) 679V (2) 746V (3) 686V (4) 746V (5) 716V (6) 734V (7) 722V (8) 716V	Q4 VDS: (1) 941V (2) 841V (3) 977V (4) 953V (5) 969V (6) 950V (7) 969V (8) 926V
3	P.F.C DIODE	D1 Rated: 1200 V/5A	I/P: High-Line +3V =603 V ACON/OFF 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 (5) Peak Load Ta:25°C	(1) 983V (2) 983V (3) 951V (4) 967V (5) 983V	
4	Diode Peak Voltage	Q100/Q107/Q110/Q113 Rated: 60V/175A	ACON/OFF I/P: High-Line +3V =603 V VO=Vomax 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 (9) burst Mode (10) Peak Load	Q100: <u>VO=Vomax</u> VDS: (1) 46.4V (2) 44.8V (3) 44.8V (4) 44.8V (5) 44.8V (6) 45.2V (7) 44.8V (8) 44.8V (9) 44.0V (10) 44.4V <u>VO=Vnormal</u> (1) 38.3V	Q107: <u>VO=Vomax</u> VDS: (1) 46.8V (2) 44.4V (3) 44.8V (4) 44.8V (5) 44.4V (6) 44.8V (7) 44.8V (8) 44.4V (9) 44.8V (10) 44.8V <u>VO=Vnormal</u> (1) 38.7V
				Q110:	Q113:

			<u>VO=Vnormal</u> O/P: (1) Full Load Ta:25°C	<u>VO=Vomax</u> VDS: (1) 45.2V (2) 44.4V (3) 44.8V (4) 44.8V (5) 44.8V (6) 45.2V (7) 44.8V (8) 44.8V (9) 44.8V (10) 45.2V <u>VO=Vnormal</u> (1) 39.6V	<u>VO=Vomax</u> VDS: (1) 44.0V (2) 44.0V (3) 44.4V (4) 44.0V (5) 44.0V (6) 44.4V (7) 44.4V (8) 44.4V (9) 44.4V (10) 44.4V <u>VO=Vnormal</u> (1) 38.3V
5	Input Capacitor Voltage	C5 Rated: 220u/450V	I/P: High-Line +3V =603V O/P: (1)Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change (4) Full load continue (5) Peak Load on/off (6) Peak Load continue Ta:25°C	(1) 405V (2) 413V (3) 421V (4) 405V (5) 409V (6) 413V	
6	Control IC Voltage Test	PWM IC U2 Rated: 8.9V~15.5V PFC IC U1 Rated: 11.4V~20V IC U4 Rated : 4.5V~ 20V IC U903 Rated:3V~ 18V O/P IC U100 Rated : 4.3V ~35V IC U101/U102 Rated : 8V~ 15V IC U104 Rated: 3V ~30V IC U105 Rated : 3.3V~36V IC U103 Rated: 3V~32V	AC ON/OFF I/P: High-Line +3V =603V O/P:(1) Full Load (2) Output Short (3) O.L.P (4) O.V.P. (5) No Load VR min (Low Line) Ta:25°C	U2 (1) 14.2V (2) 14.2V (3) 14.2V (4) 14.2V (5) 14.1V U1/U4 (1) 15.4V (2) 15.6V (3) 15.8V (4) 15.3V (5) 15.4V U903 (1) 15.6V (2) 15.8V (3) 15.7V (4) 15.3V (5) 15.4V	U100/U101/ U102/U104/ U105 (1) 11.7V (2) 12.9V (3) 11.7V (4) 11.7V (5) 11.7V U103 (1) 12.5V (2) 12.7V (3) 12.7V (4) 12.5V (5) 12.4V

■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4.87KVAC/min I/P-FG: 2.5KVAC/min O/P-FG: 0.5KVAC/min O/P-DC OK: 0.5KVAC/min	I/P-O/P: 5.357KVAC/min I/P-FG: 3 KVAC/min O/P-FG: 0.6 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta: 25°C	I/P-O/P: 10.85 mA I/P-FG: 12.09 mA O/P-FG: 3.70 mA O/P-DC OK: 0.007 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P: 500VDC > 100MΩ I/P-FG: 500VDC > 100MΩ O/P-FG: 500VDC > 100MΩ	I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta: 25°C	I/P-O/P: 50 GΩ I/P-FG: 50 GΩ O/P-FG: 50 GΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100mΩ	40A / 2min Ta: 25°C	6mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 CLASS A	I/P: 400VAC/50HZ O/P: FULL LOAD Ta: 25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B	I/P : 400 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/EN55032(CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B	I/P : 400 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	BS EN/EN61000-4-2 Din rail Model : AIR : 15KV / Contact : 8KV	I/P : 400 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	BS EN/EN61000-4-4 INDUSTRY INPUT : 4KV	I/P : 400 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	BS EN/EN61000-4-5 INDUSTRY Line-Line : 2KV Line-Earth : 4KV	I/P : 400 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 : XTR-960-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 400VAC O/P : FULL LOAD Ta= 28.6℃ 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 400VAC O/P : FULL LOAD Ta= 58.8℃			
		NO	Position	ROOM AMBIENT Ta= 28.6℃	HIGH AMBIENT Ta= 58.8℃
		1	C930	54.3℃	88.7℃
		2	C8	49.5℃	84.5℃
		3	C7	49.4℃	84.9℃
		4	RTH2	69.4℃	104.2℃
		5	U101	69.1℃	104.2℃
		6	R10	75.8℃	108.7℃
		7	C11	60.2℃	95.9℃
		8	U903	68.7℃	103.4℃
		9	C115	64.3℃	99.4℃
		10	C113	63.9℃	99.5℃
		11	C116	68.1℃	103.2℃
		12	C305	55.8℃	90.5℃
		13	C302	55.1℃	88.6℃
		14	ZNR3	51℃	86.3℃
		15	C1	54.5℃	88.8℃
		16	L1	69.7℃	105.2℃
		17	C120	58.4℃	90.9℃
		18	Q115	72.7℃	107.7℃
		19	U100	68.8℃	102.8℃
		20	Q107	70.5℃	105.3℃
		21	U900	77.2℃	112.4℃
		22	Q300	76.8℃	109.9℃
		23	U2	57.7℃	94.8℃
		24	LF100	74.1℃	109℃
		25	BD1	77.5℃	109.4℃
		26	T3	68.4℃	102.9℃
		27	T200	51.4℃	86.4℃
		28	T1 Core	75.8℃	111.3℃
		29	T1 Coil	72.9℃	109.7℃
		30	R947	50.8℃	85.9℃
		31	Q23	65.5℃	100.5℃
		32	U4	63.7℃	99.4℃
		33	J102	71.5℃	105.9℃

		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 28.6°C</th><th>HIGH AMBIENT Ta= 58.8°C</th></tr><tr><td>34</td><td>Q1</td><td>60.5°C</td><td>94.4°C</td></tr><tr><td>35</td><td>Q4</td><td>60.6°C</td><td>94.3°C</td></tr><tr><td>36</td><td>D2</td><td>58.1°C</td><td>91.9°C</td></tr><tr><td>37</td><td>T2</td><td>71.2°C</td><td>108°C</td></tr><tr><td>38</td><td>LF2</td><td>63.5°C</td><td>99.5°C</td></tr><tr><td>39</td><td>L6</td><td>62.4°C</td><td>100.7°C</td></tr><tr><td>40</td><td>L5</td><td>63.2°C</td><td>99.9°C</td></tr><tr><td>41</td><td>Q3</td><td>58.2°C</td><td>92.8°C</td></tr><tr><td>42</td><td>Q2</td><td>60.5°C</td><td>94.7°C</td></tr><tr><td>43</td><td>LF1</td><td>72.6°C</td><td>107.2°C</td></tr><tr><td>44</td><td>Q106</td><td>71.7°C</td><td>107.3°C</td></tr><tr><td>45</td><td>U1</td><td>57.5°C</td><td>91.6°C</td></tr><tr><td>46</td><td>Q7</td><td>54.9°C</td><td>88.3°C</td></tr><tr><td>47</td><td>Q24</td><td>64.4°C</td><td>98.8°C</td></tr><tr><td>48</td><td>Q11</td><td>63.9°C</td><td>97.5°C</td></tr><tr><td>49</td><td>U10</td><td>47.2°C</td><td>81.2°C</td></tr><tr><td>50</td><td>RY1</td><td>59.4°C</td><td>93.8°C</td></tr><tr><td>51</td><td>U104</td><td>57.3°C</td><td>90.9°C</td></tr><tr><td>52</td><td>D901</td><td>65.1°C</td><td>99.5°C</td></tr></table>				NO	Position	ROOM AMBIENT Ta= 28.6°C	HIGH AMBIENT Ta= 58.8°C	34	Q1	60.5°C	94.4°C	35	Q4	60.6°C	94.3°C	36	D2	58.1°C	91.9°C	37	T2	71.2°C	108°C	38	LF2	63.5°C	99.5°C	39	L6	62.4°C	100.7°C	40	L5	63.2°C	99.9°C	41	Q3	58.2°C	92.8°C	42	Q2	60.5°C	94.7°C	43	LF1	72.6°C	107.2°C	44	Q106	71.7°C	107.3°C	45	U1	57.5°C	91.6°C	46	Q7	54.9°C	88.3°C	47	Q24	64.4°C	98.8°C	48	Q11	63.9°C	97.5°C	49	U10	47.2°C	81.2°C	50	RY1	59.4°C	93.8°C	51	U104	57.3°C	90.9°C	52	D901	65.1°C	99.5°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 400 VAC O/P : 112.4% LOAD Ta : 25°C	TEST : OK																																																																																	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 600VAC/320VAC 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 60 °C/95 %R.H NO DAMAGE	I/P : 600 VAC O/P : FULL LOAD Ta= 60°C HUMIDITY= 95 %R.H	TEST : OK																																																																																	
5	TEMPERATURE COEFFICIENT	± 0.03 %/°C(0~60°C)	I/P : 400 VAC O/P : FULL LOAD	± 0.015 %/°C(0~60°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	-30~60°C	1. Thermal shock Temperature : -35°C~ +65°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:400V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:400V/ FULL LOAD BurnIn 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/sweepcycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C115 IS THE MOST CRITICAL COMPONENT (1) I/P : 400VAC O/P : FULLLOAD Ta= 28.6 °C LIFE TIME (2) I/P : 400VAC O/P : FULLLOAD Ta= 59.1 °C LIFE TIME (3) I/P : 400VAC O/P : 75% LOAD Ta= 59.7 °C LIFE TIME (4) I/P : 400VAC O/P : 50% LOAD Ta= 60.5 °C LIFE TIME	(1) 265623.9 HRS (2) 22836 HRS (3) 65806.3 HRS (4) 121011.4 HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 936.0K hrs min. Telcordia SR-332 (Bellcore); 117.5K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 400VAC O/P : FULLLOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	YUWEI	LIUTT	WANGZD

2020.10.1 TAG-QA-009