



Test Report: XDR-240-24

240W AC/DC High-End 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

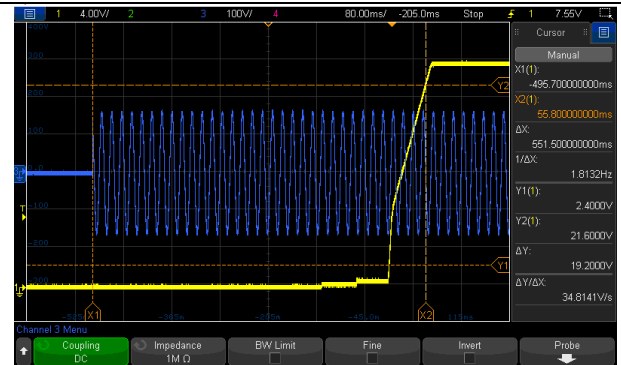
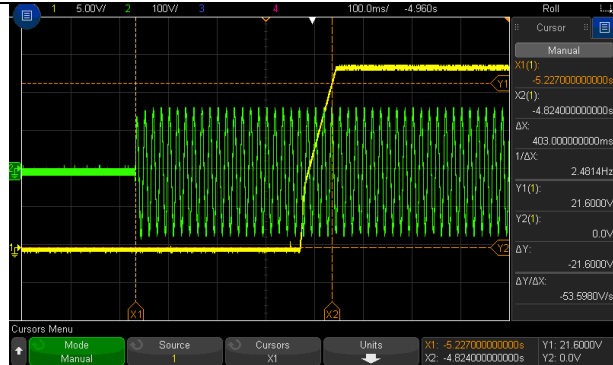
■ RELIABILITY TEST

ENVIRONMENT TEST

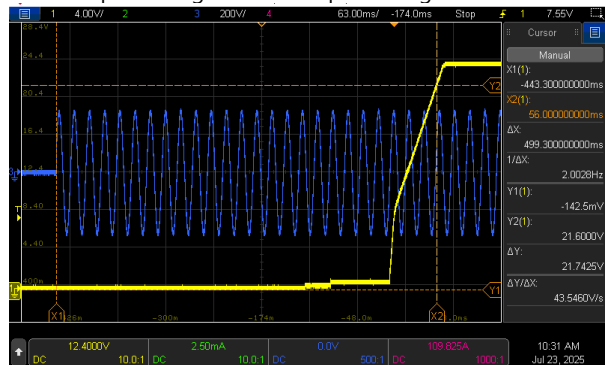
■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24V~29V	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	23.286V~29.846V/277VAC 23.286V~29.848V/230VAC 23.286V~29.846V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1% ~ +1%	I/P: 85VAC~305VAC O/P:FULL~MIN. LOAD Ta:25°C	V1: -0.079% ~ 0.084%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 85VAC~ 305VAC O/P:FULL LOAD Ta:25°C	V1: -0.017% ~ 0.025%
4	LOAD REGULATION	V1: -1% ~ +1%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.079% ~ 0.084%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	1.3%
6	RIPPLE & NOISE (Max)	V1: 100mVp-p 150mVp-p/PEAK LOAD	I/P:230VAC O/P:FULL LOAD Ta:25°C	13mVp-p / high frequency 32mVp-p / low frequency
		high frequency :	low frequency :	
7	SET UP TIME(Max)	277VAC/1500ms 230VAC/1500ms 115VAC/3000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 403ms 230VAC/ 499.3ms 115VAC/ 551.5ms
		INPUT=2770VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage	INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage	

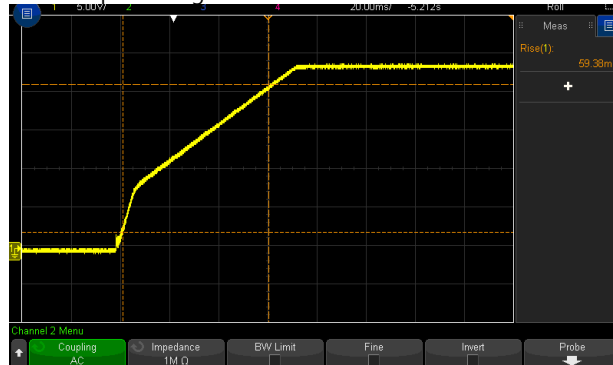


INPUT=230VAC/50HZ @ FULL LOAD
CH1: Output Voltage CH3: AC Input Voltage

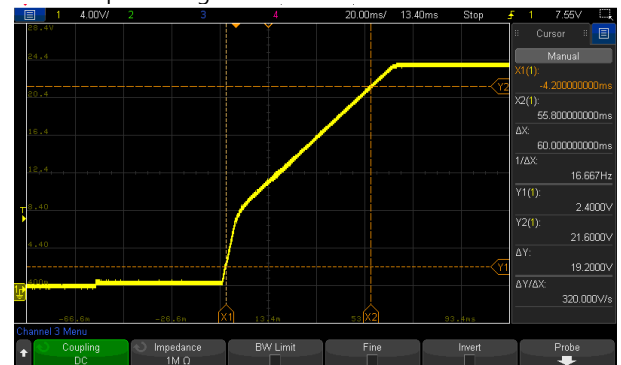


8	RISE TIME (Max)	277VAC/150ms 230VAC/150ms 115VAC/150ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 59.38ms 230VAC/ 60.3ms 115VAC/ 60ms
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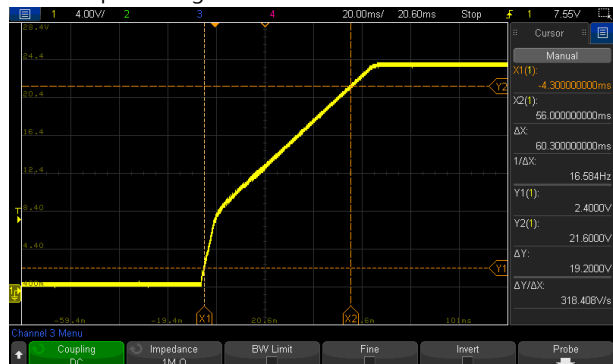
INPUT=2770VAC/50HZ @ FULL LOAD
CH1: Output Voltage

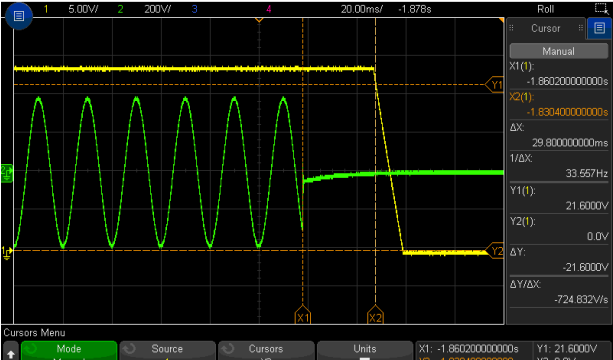
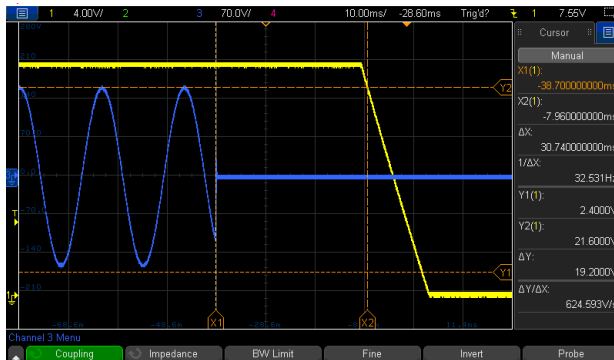
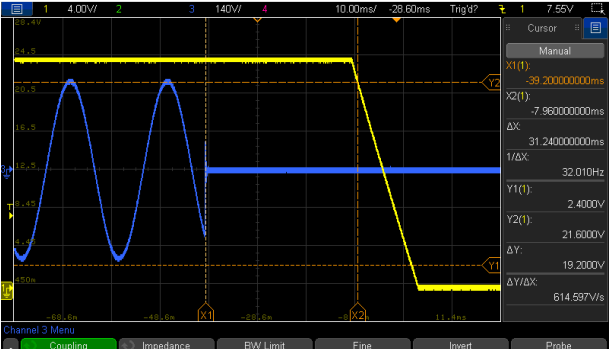
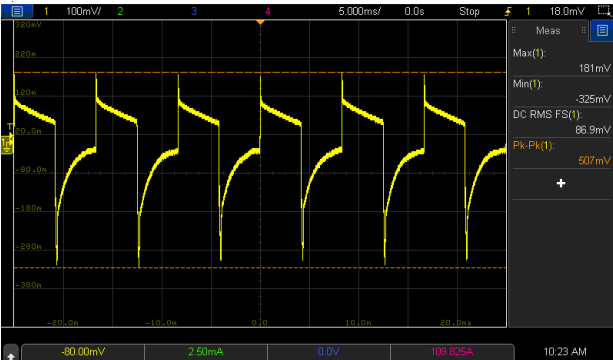
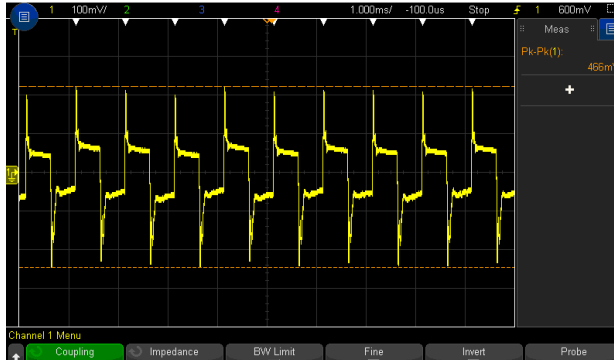


INPUT=115VAC/60HZ @ FULL LOAD
CH1: Output Voltage

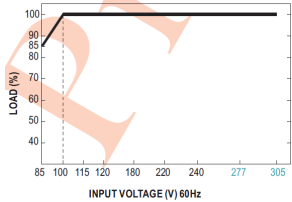


INPUT=230VAC/50HZ @ FULL LOAD
CH1: Output Voltage

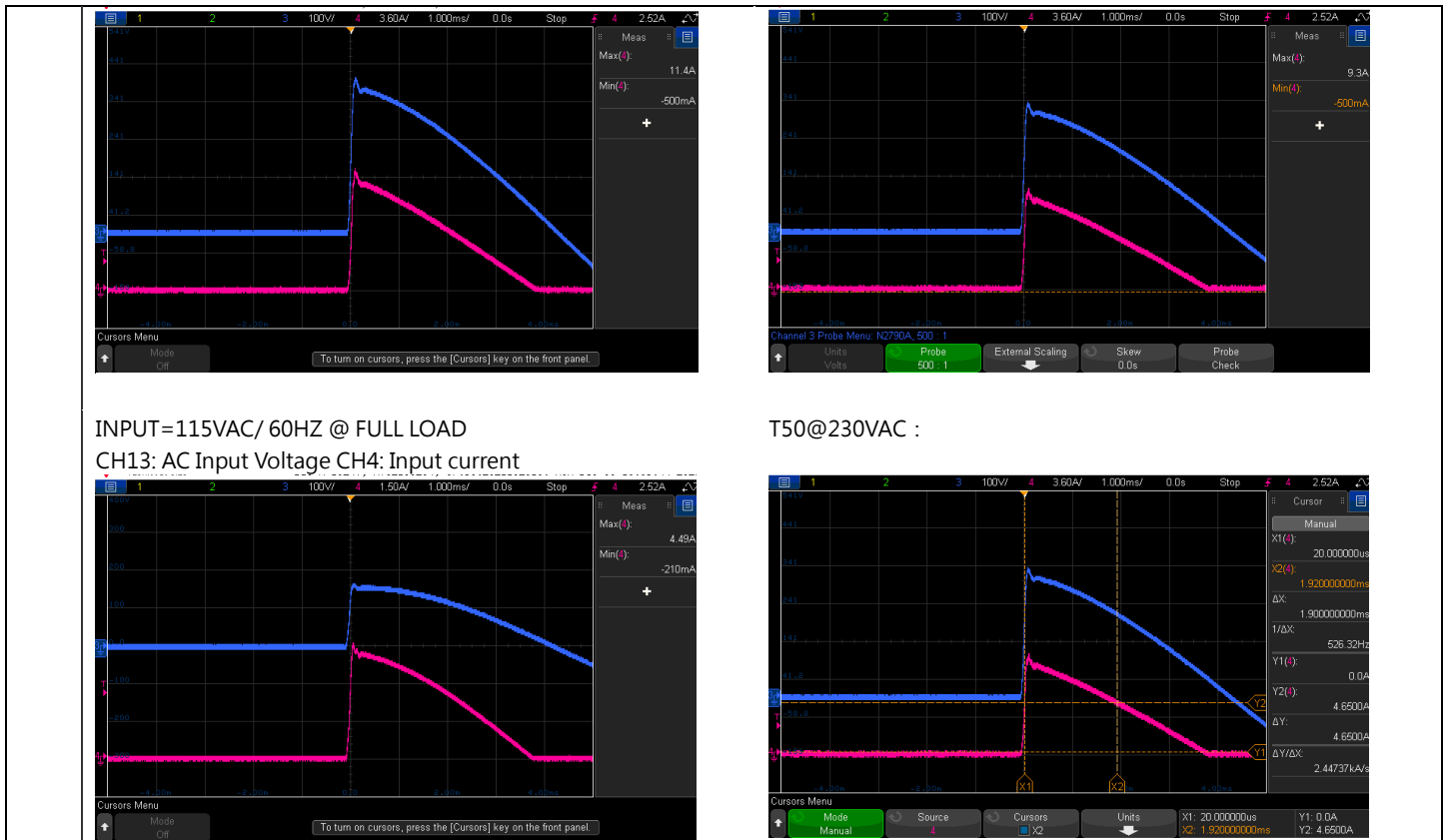


9	HOLD UP TIME (Typ.)	277VAC/20ms 230VAC/ 20ms 115VAC/ 20ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	277VAC/ 29.8ms 230VAC/ 31.24ms 115VAC/ 30.74ms
<p>INPUT=277VAC/50HZ @ FULL LOAD CH1: Output Voltage CH2: AC Input Voltage</p>  <p>INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage</p> 				
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage</p> 				
10	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1) FULL/ MIN LOAD 50%DUTY / 120HZ (2) FULL/ MIN LOAD 50%DUTY / 1KHZ Ta:25°C	507mVp-p 466mVp-p
<p>FULL / MIN LOAD 50%DUTY / 120HZ</p>  <p>FULL / MIN LOAD 50%DUTY / 1KHZ</p> 				
11	TRANSIENT RECOVERY TIME	V1: 2400mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	233mVp-p 0us

INPUT FUNCTION TEST

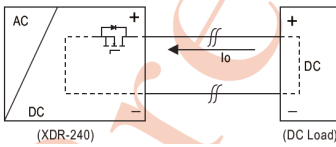
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT												
1	INPUT VOLTAGE RANGE	85VAC~305VAC 80VDC~ 431VDC	(1) I/P: TESTING O/P: FULL / 85% LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 85% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 85% LOAD Ta:25°C	(1) 79.2V~305V/ FULL LOAD 78.6V~305V/ 85% LOAD (2) 76.7Vdc~431Vdc/FULL LOAD 76.65Vdc~431Vdc/85% LOAD (3) 77Vdc~431Vdc/FULL LOAD 76.8Vdc~431Vdc/85% LOAD												
			I/P: HIGH-LINE+10V=315V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST : OK												
		Derating 50% Load @80VDC	I/P: 80VDC O/P: 50% Load	TEST : OK												
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 85VAC~ 305VAC O/P:FULL~MIN LOAD Ta:25°C	TEST : OK												
3	INPUT CURRENT (Typ.)	277V/ 1.1A 230V/ 1.3A 115V/ 2.6A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.991A/ 277VAC I =1.1226A/ 230VAC I =2.252A/ 115VAC												
4	LEAKAGE CURRENT	< 1mA@240Vac < 1.3mA@277Vac	I/P : 240VAC/60HZ I/P : 277VAC/60HZ O/P : Min LOAD Ta : 25°C	0.6865mA@240Vac 0.8145mA@277Vac												
5	NO LOAD CONSUMPTION	Remote Power OFF: 1W@115Vac & 230Vac Remote Power ON: 2.5W@115Vac & 230Vac	I/P : 115VAC I/P : 230VAC I/P : 277VAC O/P : NO LOAD Ta : 25°C	TEST: <table border="1" data-bbox="1150 1529 1501 1756"> <thead> <tr> <th></th> <th>Remote Power OFF</th> <th>Remote Power ON</th> </tr> </thead> <tbody> <tr> <td>115VAC</td> <td>0.576W</td> <td>1.703W</td> </tr> <tr> <td>230VAC</td> <td>0.696W</td> <td>1.662W</td> </tr> <tr> <td>277VAC</td> <td>0.755W</td> <td>1.739W</td> </tr> </tbody> </table>		Remote Power OFF	Remote Power ON	115VAC	0.576W	1.703W	230VAC	0.696W	1.662W	277VAC	0.755W	1.739W
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6	POWER FACTOR (Typ.)	0.9/277VAC 0.95/ 230VAC 0.98/115VAC	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.9165/277VAC PF=0.9762/230VAC PF=0.9973/115VAC												

	<p>P.F vs LOAD</p> <table border="1"> <caption>P.F vs LOAD Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>115VAC PF</th> <th>230VAC PF</th> <th>277VAC PF</th> </tr> </thead> <tbody> <tr><td>10%</td><td>0.92</td><td></td><td></td></tr> <tr><td>20%</td><td>0.98</td><td>0.72</td><td></td></tr> <tr><td>30%</td><td>0.99</td><td>0.87</td><td>0.65</td></tr> <tr><td>40%</td><td>0.99</td><td>0.93</td><td>0.75</td></tr> <tr><td>50%</td><td>0.99</td><td>0.95</td><td>0.83</td></tr> <tr><td>60%</td><td>0.99</td><td>0.96</td><td>0.86</td></tr> <tr><td>70%</td><td>0.99</td><td>0.97</td><td>0.88</td></tr> <tr><td>80%</td><td>0.99</td><td>0.97</td><td>0.89</td></tr> <tr><td>90%</td><td>0.99</td><td>0.97</td><td>0.90</td></tr> <tr><td>100%</td><td>0.99</td><td>0.98</td><td>0.91</td></tr> </tbody> </table>			LOAD (%)	115VAC PF	230VAC PF	277VAC PF	10%	0.92			20%	0.98	0.72		30%	0.99	0.87	0.65	40%	0.99	0.93	0.75	50%	0.99	0.95	0.83	60%	0.99	0.96	0.86	70%	0.99	0.97	0.88	80%	0.99	0.97	0.89	90%	0.99	0.97	0.90	100%	0.99	0.98	0.91	
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7	EFFICIENCY(Typ.)	95%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	95.25%																																												
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8	INRUSH CURRENT(Typ.)	277V/15A 230V/10A 115V/6A COLD START	I/P : 277 VAC I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =11.4A/ 277VAC I =9.3A/ 230VAC I =4.49A/ 115VAC T50=1900us/230V																																												
	INPUT=277VAC/50HZ @ FULL LOAD CH3: AC Input Voltage CH4: Input current		INPUT=230VAC/50HZ @ FULL LOAD CH3: AC Input Voltage CH4: Input current																																													

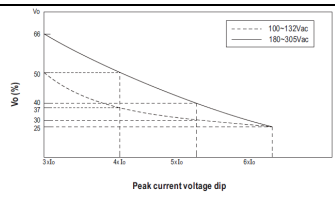


PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	Protection type: 105%~200% rated output power for more than 5 sec then constant current limiting at rate current without shutdown when $V_o=30\% \sim 100\%$; Hiccup mode when $V_o < 30\%$ rated voltage	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P: TESTING Ta: 25°C	TEST : 125.2%/305VAC 125.2%/230VAC 123.8%/100VAC Protection type: 105%~200% rated output power for more than 5 sec then constant current limiting at rate current without shutdown when $V_o=30\% \sim 100\%$; Hiccup mode when $V_o < 30\%$ rated voltage
2	OVER VOLTAGE PROTECTION	30V~34V Protection type: Shut down o/p voltage, re-power on to recover	I/P: 305VAC I/P: 85VAC O/P: MIN LOAD Ta: 25°C	31.9V/ 305VAC 31.9V/ 85VAC 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 I/P: 85VAC O/P: FULL LOAD	O.T.P. Active OK Protection type : Shut down o/p voltage, recovers automatically after temperature goes down

4	SHORT PROTECTION	<p>SHORT EVERY OUTPUT 1 HOUR NO DAMAGE</p> <p>Protection type: Hiccup mode when $V_o < 30\%$ rated voltage , recovers automatically after fault condition is removed</p>	<p>I/P: 305VAC I/P: 85VAC O/P:FULL LOAD</p>	<p>TEST : <u>OK</u> NO DAMAGE PROTECTION TYPE : Hiccup mode when $V_o < 30\%$ rated voltage , recovers automatically after fault condition is removed</p>
5	Protection against Inverse Voltages from the Load	<p>Prevent PSU damage from Back Electro magnetic Force during deceleration of motor or inductive load</p> 	<p>I/P: 230VAC O/P:TESTING Ta:25°C</p>	<p>TEST : <u>OK</u></p>

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																								
1	DC OK CONTACT RATINGS	30VDC/1A , 30VAC/0.5A RESISTIVE LOAD	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST: <u>OK</u>																																								
2	REMOTE CONTROL	<p>Power ON: Pin9 and Pin10 Short or keep 4~5Vdc</p> <p>Power OFF: Pin9 and Pin10 Open or keep < 0.5Vdc</p>	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST: <u>OK</u>																																								
3	PULSE CURRENT CAPABILITY ( <table border="1"> <thead> <tr> <th>Load</th> <th>100-132Vac Vo(%)</th> <th>180-305Vac Vo(%)</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>3xIo</td> <td>50</td> <td>66</td> <td>100ms</td> </tr> <tr> <td>4xIo</td> <td>37</td> <td>50</td> <td>70ms</td> </tr> <tr> <td>5xIo</td> <td>30</td> <td>40</td> <td>40ms</td> </tr> <tr> <td>6xIo</td> <td>25</td> <td>25</td> <td>15ms</td> </tr> </tbody> </table>	Load	100-132Vac Vo(%)	180-305Vac Vo(%)	Time	3xIo	50	66	100ms	4xIo	37	50	70ms	5xIo	30	40	40ms	6xIo	25	25	15ms	<p>I/P: 180VAC I/P: 100VAC O/P: TESTING Ta:25°C</p>	<p>180V :</p> <table border="1"> <thead> <tr> <th>Load</th> <th>Io_{out}(ms)</th> </tr> </thead> <tbody> <tr> <td>3xIo</td> <td>112.4</td> </tr> <tr> <td>4xIo</td> <td>85.2</td> </tr> <tr> <td>5xIo</td> <td>55.4</td> </tr> <tr> <td>6xIo</td> <td>35.6</td> </tr> </tbody> </table> <p>100V :</p> <table border="1"> <thead> <tr> <th>Load</th> <th>Io_{out}(ms)</th> </tr> </thead> <tbody> <tr> <td>3xIo</td> <td>116.8</td> </tr> <tr> <td>4xIo</td> <td>85</td> </tr> <tr> <td>5xIo</td> <td>54.7</td> </tr> <tr> <td>6xIo</td> <td>35.9</td> </tr> </tbody> </table>	Load	Io _{out} (ms)	3xIo	112.4	4xIo	85.2	5xIo	55.4	6xIo	35.6	Load	Io _{out} (ms)	3xIo	116.8	4xIo	85	5xIo	54.7	6xIo	35.9
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4	PULSE CURRENT CAPABILITY		<p>I/P:230VAC O/P:6*Io Ta:25°C</p>	TEST: <u>OK</u>
5	LED Status Indicators		<p>I/P:230VAC O/P: TESTING Ta:25°C</p>	TEST: <u>OK</u>
6	PARALLEL	Up to 960W (3+1), please refer to Function Manual for more details	<p>I/P: TESTING O/P: TESTING LOAD Ta:25°C</p>	TEST : <u>OK</u>
7	PEAK Power	<p>I/P: 100/200VAC O/P:</p>		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	Q5/Q6 : Rated: 600V/21A	AC ON/OFF I/P: High-Line +3V =308V 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	Q5 Q6 VDS: VDS: (1) 575V (1) 523V (2) 535V (2) 523V (3) 572V (3) 523V (4) 572V (4) 527V (5) 572V (5) 527V (6) 572V (6) 523V (7) 535V (7) 515V (8) 568V (8) 519V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 : Rated: 600V/34A	AC ON/OFF I/P: High-Line +3V =308V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz	VDS: (1) 459V (2) 447V (3) 459V (4) 455V (5) 459V (6) 451V



			<p>(4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz</p> <p>(5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz</p> <p>(6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</p> <p>(7)0%→400% Load.</p> <p>(8) Peak Load</p> <p>Ta:25°C</p>	<p>(7) 455V</p> <p>(8) 455V</p>																												
3	P.F.C DIODE	D1 : Rated: 4A/650V	<p>I/P: High-Line +3V =308 V</p> <p>AC ON/OFF</p> <p>O/P: (1)Full Load</p> <p>(2)Output Short</p> <p>(3) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz</p> <p>(4) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</p> <p>(5) Peak Load</p> <p>Ta:25°C</p>	<p>(1) 441V</p> <p>(2) 453V</p> <p>(3) 441V</p> <p>(4) 437V</p> <p>(5) 449V</p>																												
4	Diode Peak Voltage	Q101/Q103: Rated: 100V/60A	<p>AC ON/OFF</p> <p>I/P: High-Line +3V =308 V</p> <p><u>VO=Vomax</u></p> <p>O/P: (1)Full Load</p> <p>(2)Output Short</p> <p>(3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz</p> <p>(4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz</p> <p>(5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz</p> <p>(6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</p> <p>(7)0%→400% Load.</p> <p>(8).NO LOAD</p> <p>(9) Peak Load</p> <p><u>VO=Vonormal</u></p> <p>O/P: (1) Full Load</p> <p>Ta:25°C</p>	<table border="0"> <tr> <td>Q101:</td> <td>Q103:</td> </tr> <tr> <td><u>VO=Vomax</u></td> <td><u>VO=Vomax</u></td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1) 70.3V</td> <td>(1) 73.9V</td> </tr> <tr> <td>(2) 70.3V</td> <td>(2) 72.7V</td> </tr> <tr> <td>(3) 70.3V</td> <td>(3) 71.7V</td> </tr> <tr> <td>(4) 70.3V</td> <td>(4) 69.7V</td> </tr> <tr> <td>(5) 69.1V</td> <td>(5) 69.9V</td> </tr> <tr> <td>(6) 68.5V</td> <td>(6) 72.1V</td> </tr> <tr> <td>(7) 68.7V</td> <td>(7) 69.3V</td> </tr> <tr> <td>(8) 67.9V</td> <td>(8) 69.7V</td> </tr> <tr> <td>(9) 74.1V</td> <td>(9) 72.3V</td> </tr> <tr> <td><u>VO=Vonormal</u></td> <td><u>VO=Vonormal</u></td> </tr> <tr> <td>(1) 63.2V</td> <td>(1) 62.0V</td> </tr> </table>	Q101:	Q103:	<u>VO=Vomax</u>	<u>VO=Vomax</u>	VDS:	VDS:	(1) 70.3V	(1) 73.9V	(2) 70.3V	(2) 72.7V	(3) 70.3V	(3) 71.7V	(4) 70.3V	(4) 69.7V	(5) 69.1V	(5) 69.9V	(6) 68.5V	(6) 72.1V	(7) 68.7V	(7) 69.3V	(8) 67.9V	(8) 69.7V	(9) 74.1V	(9) 72.3V	<u>VO=Vonormal</u>	<u>VO=Vonormal</u>	(1) 63.2V	(1) 62.0V
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5	Input Capacitor Voltage	C5 : Rated: 100μ /450V	<p>I/P: High-Line +3V =308V</p> <p>O/P: (1)Full Load input on/off</p> <p>(2) Min load input on /Off</p> <p>(3) Full Load /Min load Change</p> <p>(4) Full load continue</p> <p>(5) Peak Load on/off</p> <p>(6) Peak Load continue</p> <p>Ta:25°C</p>	<p>(1) 437V</p> <p>(2) 433V</p> <p>(3) 437V</p> <p>(4) 437V</p> <p>(5) 437V</p> <p>(6) 437V</p>																												
6	Control IC Voltage Test	PFC/PWM IC U1 : Rated : 12.5V~ 27.9V	AC ON/OFF	<table border="0"> <tr> <td>U1</td> <td>U404</td> </tr> <tr> <td>(1) 13.5V</td> <td>(1) 5.45V</td> </tr> </table>	U1	U404	(1) 13.5V	(1) 5.45V																								
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	<p>O/P IC U101: Rated: 4.75V~38V</p> <p>IC U404 : Rated : 3V~36V</p> <p>MCU IC U9 : Rated : 2V~3.6V Level: 3.2835~3.3165V</p> <p>MCU IC U306: Rated : 2.4V~ 3.6V Level: 3.2835~3.3165V</p>	<p>I/P: High-Line +3V =308V</p> <p>O/P: (1) Full Load (2) Output Short (3) O.L.P (4) O.V.P. (5) No Load VR min (Low Line)</p> <p>MCU : (1) Full Load (2) Output Short (3) O.L.P (4) O.V.P. (5) No Load VR min (LOW LINE)</p> <p>Ta:25°C</p>	<p>(2) 13.5V (3) 13.4V (4) 13.5V (5) 13.5V</p> <p>U101 (1) 14.8V (2) 14.8V (3) 13.8V (4) 13.8V (5) 14.8V</p>	<p>(2) 5.45V (3) 5.45V (4) 5.45V (5) 5.45V</p> <p>U9 (1) 3.306V (2) 3.306V (3) 3.306V (4) 3.306V (5) 3.306V</p> <p>U306 (1) 3.298V (2) 3.298V (3) 3.298V (4) 3.298V (5) 3.298V</p>
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■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4 KVAC/min I/P-FG : 2 KVAC/min O/P-FG:1.5 KVAC/min O/P-DC OK: 0.5 KVAC/min	I/P-O/P: 4.4 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 1.8 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta:25°C	I/P-O/P: 3.94mA I/P-FG: 3.81mA O/P-FG: 4.12mA O/P-DC OK: 0.008mA 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: 50GΩ I/P-FG: 50GΩ O/P-FG: 50GΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100mΩ	40A /2min Ta:25°C	12mΩ

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) BS EN/EN61204-3 CNS15936 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab



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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 126%LOAD Ta : 25°C	TEST : OK																																																																																																																																											
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 305VAC/100VAC O/P : 80%/100 %LOAD Ta= -45°C/-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 : 315 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 : 230 VAC O/P : FULL LOAD	± 0.003%/°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: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 C108 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= 60°C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 60°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 60°C LIFE TIME		(1) 924419HRS (2) 88181HRS (3) 120990HRS (4) 164832HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1066.2K hrs min. Telcordia SR-332 (Bellcore) ; 129.1K 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	Hanxr	Liutt	Wangdz

2020.10.1 TAG-QA-009