

Quality Engineering Test Report

SERIES: DR-120 120W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. DR-120-12 12V/10A B. DR-120-24 24V/5A C. DR-120-48 48V/2.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT						
1	MAX. INRUSH CURREN	I/P:230VAC SPEC:60A O/P: FULL LOAD	A: 30.617A B: 37.656A C: 27.812A	P						
2	SET UP TIME	I/P:230VAC SPEC:500mS O/P:FULL LOAD	A: 268.86mS B: 309.21mS C: 301.30mS	P						
3	RISE TIME	I/P:230VAC SPEC:70mS O/P:FULL LOAD	A: 18.82 mS B: 45.88 mS C: 32.29 mS	P						
4	HOLD UP TIME	I/P:230VAC SPEC:30mS O/P:FULL LOAD	A: 39.19mS B: 43.18mS C: 44.21mS	P						
5	LINE REGULATION	I/P:176-264VAC SPEC: A: ± 0.5 % O/P:FULL LOAD B: ± 0.5 % C: ± 0.5 %	A. +0.00 % ~ +0.05 % B. -0.00 % ~ +0.024 % C. -0.012 % ~ +0.037 %	P						
6	LOAD REGULATION	I/P:230VAC SPEC: A: ± 1 % O/P:MIN. TO FULL B: ± 1 % LOAD C: ± 1 %	A. -0.35 % ~ +0.35 % B. -0.024 % ~ +0.024 % C. -0.04 % ~ +0.08 %	P						
7	OUTPUT VOLTAGE TOLERANCE	I/P:176-264VAC SPEC: A: ± 2 % O/P:0% TO FULL LOAD B: ± 1 % C: ± 1 %	A. -0.73 % ~ +0.049 % B. -0.078 % ~ +0.000 % C. -0.077 % ~ +0.039 %	P						
8	OVER LOAD PROTECTION	I/P:230VAC SPEC: A: 105 % ~ 150 % O/P:TESTING B: 105 % ~ 150 % C: 105 % ~ 150 %	A: 129% B: 120% C: 135%	P						
9	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:176-264VAC O/P:FULL LOAD	A. 125.0V ~ 264 VAC B. 129.087V ~ 264 VAC C. 125.062V ~ 264 VAC	P						
10	RIPPLE&NOISE	I/P:230VAC SPEC: A: 80 mVp-p O/P:FULL B: 80 mVp-p LOAD C: 100 mVp-p	A: 24 mVp-p B: 16 mVp-p C: 37 mVp-p	P						
11	AC INPUT CURRENT	I/P:230VAC SPEC:1.7A O/P:FULL LOAD	A: 1.229 A B: 1.208 A C: 1.149 A	P						
12	EFFICIENCY	I/P:230VAC SPEC: A: 80 % O/P:FULL LOAD B: 84 % C: 85 %	A: 81.938% B: 85.422% C: 85.977%	P						
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC: A: 15~16.5V O/P:MIN LOAD B: 29~33V C: 58~65V	A: 16.2V B: 31.2V C: 59.9V	P						
14	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: A: 12 V ~ 14 V O/P:MIN. LOAD B: 24 V ~ 28 V C: 48 V ~ 53 V	A. 10.65 V ~ 15.084 V B. 21.339 V ~ 29.781 V C. 39.76 V ~ 55.88 V	P						
15	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<3.5mA N-FG--<3.5mA	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">A:</td> <td>L-FG: 1.74mA N-FG: 1.75mA</td> </tr> <tr> <td>B:</td> <td>L-FG: 1.74mA N-FG: 1.75mA</td> </tr> <tr> <td>C:</td> <td>L-FG: 1.74mA N-FG: 1.75mA</td> </tr> </table>	A:	L-FG: 1.74mA N-FG: 1.75mA	B:	L-FG: 1.74mA N-FG: 1.75mA	C:	L-FG: 1.74mA N-FG: 1.75mA	P
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16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3KVAC/ 1 min. I/P - FG: 1.5KVAC/ 1 min. O/P -FG: 0.5KVAC/ 1 min.	<table border="1"> <tr> <td>A:</td> <td>I/P-O/P: 8mA I/P-FG: 5.9mA O/P-FG: 14.8mA</td> </tr> <tr> <td>B:</td> <td>I/P-O/P: 6.2mA I/P-FG: 4.8mA O/P-FG: 7.2mA</td> </tr> <tr> <td>C:</td> <td>I/P-O/P: 9.45mA I/P-FG: 7.79mA O/P-FG: 15.5mA</td> </tr> </table>	A:	I/P-O/P: 8mA I/P-FG: 5.9mA O/P-FG: 14.8mA	B:	I/P-O/P: 6.2mA I/P-FG: 4.8mA O/P-FG: 7.2mA	C:	I/P-O/P: 9.45mA I/P-FG: 7.79mA O/P-FG: 15.5mA	P																																	
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17	INSULATION RESISTANCE	SPEC: I/P-O/P: 500VDC/100M Ω MIN. I/P-FG: 500VDC/100M Ω MIN. O/P-FG: 500VDC/100M Ω MIN.	<table border="1"> <tr> <td>A:</td> <td>TEST OK</td> </tr> <tr> <td>B:</td> <td>TEST OK</td> </tr> <tr> <td>C:</td> <td>TEST OK</td> </tr> </table>	A:	TEST OK	B:	TEST OK	C:	TEST OK	P																																	
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18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:25.7°C BURN-IN DURATION : 2.5 hrs	B:NON BREAK	P																																							
19	ENVIRONMENT TEST	<p>1.LOW TEMPERATURE TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-13.8°C</p> <p>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:52.2C</p> <p>3.High Humidity High Voltage On/Off Test I/P:267VAC O/P:FULL LOAD AMBIENT TEMPERATURE:26.7°C AMBIENT HUMIDITY:95%</p>	<p>AFTER 14.5 hrs POWER ON <u>OK</u></p> <p>AFTER 6.5 hrs NON BREAK</p> <p>AFTER 14 hrs POWER ON NON BREAK</p>	P																																							
20	TEMPERATURE RISE TEST Trise OF PARTS	<p>B: I/P :230VAC AFTER1.5 hr BURN-IN O/P :FULL LOAD TA:26.1°C</p> <table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>Trise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>66.8°C</td> <td>40.7°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>76.6°C</td> <td>50.5°C</td> </tr> <tr> <td></td> <td>T1</td> <td>MAIN TRANSFORMER WIRE</td> <td>80.7°C</td> <td>54.6°C</td> </tr> <tr> <td></td> <td>D51</td> <td>O/P DIODE</td> <td>74.1°C</td> <td>48.0°C</td> </tr> <tr> <td></td> <td>C52</td> <td>O/P FILTER CAPACITOR</td> <td>67.8°C</td> <td>41.7°C</td> </tr> <tr> <td></td> <td>C5</td> <td>I/P FILTER CAPACITOR</td> <td>51.2°C</td> <td>25.1°C</td> </tr> <tr> <td></td> <td>LF2</td> <td>I/P FILTER TRANSFORMER</td> <td>63.4°C</td> <td>37.3°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	Trise		BD1	BRIDGE DIODE	66.8°C	40.7°C		Q1	MAIN TRANSISTOR	76.6°C	50.5°C		T1	MAIN TRANSFORMER WIRE	80.7°C	54.6°C		D51	O/P DIODE	74.1°C	48.0°C		C52	O/P FILTER CAPACITOR	67.8°C	41.7°C		C5	I/P FILTER CAPACITOR	51.2°C	25.1°C		LF2	I/P FILTER TRANSFORMER	63.4°C	37.3°C	P
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21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	<p>B: FUSE :4A/250V BRIDGE DIODE :D3SB60 LINE FILTER :TF-411 TRANSFOMER TF-798 POWER SWITCHER :2SK2850 OUTPUT DIODE :ESAD92-02 20A/200V OUTPUT CAPACITOR : N.C.C KY1500uF/35V 105°C INPUT CAPACITOR :RUBYCON 330uF/200V 105°C P.C.B :DR-120A-R1 FR-4 20Z DS</p>																																									
22	LIFE CYCLE	<p>B: SUPPOSE C52 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc52:66.7°C Life: 97264.8hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc52:89.8°C Life: 19630.8hrs</p>		P																																							
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																							
20011012	RD SAMPLE 12V,24V,48V	PASS	VINCENT	MAX LIN																																							
20020423	A111B01 12V,24V,48V	PASS	VINCENT	MAX LIN																																							
20020605	A205B02 12V,24V	PASS	VINCENT	MAX LIN																																							
20021206	A2011b01 24V	PASS	VINCENT	MAX LIN																																							