



PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
ORV3 Busbar Conn.	9120-2P02AWX325-A001	9120-D0000-001
	9120-2P02AWX146-A002	9120-D0000-002

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
ORV3 Busbar Conn.	9120-PSS-001	X1	歐品電子
	Approved 核准	Checked 審核	Prepared 制作



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1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the **ORV3 Busbar Connector**, which is designed and manufactured by Oupiin Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本產品規格書規定了由歐品電子有限公司設計生產的**ORV3 Busbar Connector**型連接器產品的特性及測試方法。本產品規格書適用於但不局限於封面所顯示的產品料號。

2. REFERENCE DOCUMENTS 參考文件

MIL-STD-1344	Test method for electrical connector 電子連接器測試方法
MIL-STD-202	Test method for electrical components 電子零件測試方法
EIA364	Test method for electrical components 電子零件測試方法
JIS C 0051	Test method for electrical components 電子零件測試方法
MIL-G-45204C	Specification for gold plating 鍍金規格
IEC-512-3	IEC standard for current carrying capacity tests IEC電流測試標準
QQ-N-290A	Specification for nickel plating 鍍鎳規格
MIL-P-81728A	Specification for tin/lead plating 鍍錫鉛規格
MIL-T-10727B	Specification for tin plating 鍍錫規格
UL1977	UL standard for safety of attachment plug and receptacle UL安規要求標準

3. FEATURE & DIMENSIONS 特征及尺寸

3.1. PRODUCT DIMENSION 產品尺寸

These connectors shall have the dimensions as shown in drawing.

本產品的相關尺寸參見圖面。

3.3. PCB/PANEL LAYOUT 印刷電路板佈局

The recommended PCB layout is shown in drawing.

本產品適用的 PCB layout 參見圖面。

3.4. BILL OF MATERIAL 材料清單

Harmful material controlling follows the requirements of RoHS. The bill of material is described in drawing.

有害物質控制符合RoHS指令要求。本產品使用的材料參見圖面。

3.5. MECHANICAL & ELECTRICAL CHARACTERISTIC 機械及電氣特性

The connector shall have the mechanical and electrical performance as described in drawing.

本產品的機械及電氣特性參見圖面。



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3.6. PACKAGING 包裝

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

產品可依客戶指定要求包裝，包裝材料與包裝方式參見產品包裝規範。

3.7. RATING CURRENT, RATING VOLTAGE AND TR 額定電流,額定電壓

Rating current 額定電流

Power Contacts 電源端子

Air condition	Current rating	Ambient temperature	Maximum temperature rise
Still air	420A	Room temperature	30°C
Still air	700A	Room temperature	95°C
Air flow 300 LFM	600A	60°C	35°C
Air flow 300 LFM	700A	60°C	45°C

Chassis Ground Contacts : 2x32A total maximum for 2-minute duration.

接地端子：最大電流 2x32A 持續 2 分鐘。

Rating Voltage : 480 V

額定電壓：480 V

3.8 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -40°C~+105°C, including terminal temperature rise for rating current.

Storage Temperature :0°C~+40°C, Humidity: 80%RH under , Time limit is 18 months the products are stored .

溫度範圍：-40°C~+105°C,包含接觸端子的額定電流溫升.

儲存溫度：0°C~+40°C，濕度：80%RH以下,產品限存時間為18個月.

4. PERFORMANCE AND TEST DESCRIPTION 性能及測試

4.1. REQUIREMENT 要求

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table I**.

本產品設計符合附表一所列的機械，電氣及環境要求。

4.2. TEST CONDITION 測試條件

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

除非特別注明，所有測試在室溫條件下完成。



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4.3. SAMPLE SELECTION 樣品選擇

Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10cycles of durability. Each group shall be containing 5 test samples at least.

測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用。樣品已預先插拔10次，每組測試至少有5個樣品。

4.4. TEST SEQUENCE 測試順序

Product qualification test sequence as shown in **Table II**.

產品品質測試順序見附表二。

Table I: Test Requirements and Methods

附表一：測試要求與方法

Items 項目	Requirements 要求	Test Methods 測試方法
1. Confirmation of Product 產品確認	Product shall be conforming to the requirements of applicable product drawing. 產品必須符合相關產品圖面的求。	Visually, dimensions and functionally inspected per applicable product drawing. 依相關產品圖面，檢查產品的外觀、尺寸及功能。
2. Contact Resistance 接觸阻抗	10.0mΩ Max initial. 初始狀態 10.0mΩ Max 20.0mΩ Max. Test after. 測試後 20.0mΩ Max Per EIA-364-23 適用：EIA-364-23	Subject mated contacts assembled in housing to closed circuit of 20 mA max. 所述固定端子連結到一個封閉回路中測試,電流 100 mA max,電壓 20 mV max。
3. Insulation Resistance 絕緣阻抗	5000 MΩ Min. 最小 5000 MΩ. Per EIA-364-21 適用：EIA-364-21	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. (500 V DC±10%). 測試產品相鄰端子間以及端子與接地間的電阻 (500 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	Dielectric withstand test potential of 1960 VDC for 1 minute, current leakage must be 1.0mA Max. 必須承受測試電壓 1960 VDC，時間 1 分鐘，漏電流不大於 1.0 mA Per EIA-364-20 適用：EIA-364-20.	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. 對產品相鄰端子間以及端子與接地間加載電壓，並測試其漏電流。



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5. Durability 耐久性	After testing : 20.0mΩ Max . 測試後最大 20.0mΩ	Repeat mate and unmated for connector 50 cycles, at a speed of 127±6 mm/minute.
	Per EIA-364-09 適用: EIA-364-09	重複進行配合產品 50 次插拔，速度 127±6 mm/分鐘。
6. Durability (Preconditioning) 耐久性(預處理)	After testing : 20.0mΩ Max . 測試後最大 20.0mΩ	Repeat mate and unmated for connector 20 cycles, at a speed of 127±6 mm/minute.
	Per EIA-364-09 適用: EIA-364-09	重複進行配合產品 20 次插拔，速度 127±6 mm/分鐘。
7. Contact Retention Force 端子保持力	147N /Pin. Min. 保持力最小: 147N /pin Max	Apply axial pull force to cable in axial and 45° directions for 12.7±6 mm/minute of 6 seconds each.
	Per EIA-364-29 適用: EIA-364-29	以 12.7±6mm/分鐘的速度依照 45 度角施加六個軸向拉力從塑膠本體上拔出端子。
8. Mating /Un-mating Force 插入力/拔出力	Mating force: 120N/pin Max. Un-mating force:15N /pin Min 插入力最大: 120N /pin Max 拔出力最小: 15N/pin Min	At a speed of 12.7±6 mm/minute, apply axial insert the mating part into fully or pull out from the subject product.
	Per EIA-364-13 適用: EIA-364-13	以 12.7±6 mm/分鐘的速度，軸向完全插入對配插件到被測產品中或從被測產品中拔出。
9. Vibration 機械振動	After testing, no damage. No electrical discontinuity greater than 1μs shall occur. Contact Resistance: 20 mΩ max 測試後，產品無損壞。 不允許出現超過 1μs 的瞬間斷開，接觸阻抗不超過 20mΩ。	Subject mated connector to 50-2000-50 Hz traversed in 1 minute at 9.26rms. amplitude, 2 hour each of 3 mutually perpendicular planes,
	Per EIA-364-28 適用: EIA-364-28	50-2000-50 Hz, 振幅 9.26 mm 條件下，在互相垂直的三個面上，每個面 2 小時下測量。
10. Mechanical Shock 機械衝擊	After testing, no damage. No electrical discontinuity greater than 1μs shall occur. Contact Resistance: 20 mΩ max 測試後，產品無損壞。 不允許出現超過 1μs 的瞬間斷開，接觸阻抗不超過 20mΩ。	Subject mated connector and shock at 50g with 1/2 sine wave (11millisecond) shocks in the 3 axes (18 shocks total)
	Per EIA-364-27. 適用: EIA-364-27。	加載 50g 半正弦波，持續 11 毫秒，三個方向共 18 次。
11. Thermal Shock 溫度沖擊	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗: 接觸阻抗最大20mΩ；	Number of Cycles :25 Times Temperature Range :Between -65°Cand+105°C Time at Each Temperature :30 minutes Transfer Time :5 minutes, maximum 測試循環次數:25 次 溫度範圍 - 在 -65°C 與 +105°C 之間 每個溫度的時間 - 30 分鐘 轉換時間 - 最多 5 分鐘
	Per EIA-364-32 適用: EIA-364-32	



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12. Humidity- Temperature Cycle 溫濕度循環	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗：接觸阻抗最大 20mΩ Per EIA-364-31 適用：EIA-364-31	Subject product at 25°C, 80-98%.R.H ; 65°C, 90-98%.R.H for 10 day. 產品置於 25°C,相對濕度：80-98%, ; 65°C,相對 濕度：90-98%,循環 10 天,
13. Salt Spray 鹽霧	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗：接觸阻抗最大 20mΩ Per EIA-364-26 適用：EIA-364-26	5±1% salt concentration(PH=7.0) ,48 hours 35+1/-2°C 鹽水濃度 5±1%(PH=7.0),時間 48 小時，溫度 35+1/-2°C。
14.High Temperature Life 高溫老化	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗：接觸阻抗最大 20mΩ Per EIA-364-17 適用：EIA-364-17	Subject product to 105°C for 1008 hours continuously. 產品置於 105°C 連續 1008 小時。
15.High Temperature Life (Preconditioning) 高溫老化(預處理)	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗：接觸阻抗最大 20mΩ Per EIA-364-17 適用：EIA-364-17	Subject product to 105°C for 75 hours continuously. 產品置於 105°C 連續 75 小時。
16.Dust 防塵測試	After testing : 20.0mΩ Max . 測試後最大 20.0mΩ Per EIA-364-91 適用：EIA-364-91	Un-mated 1 hour , Dust Composition #1 (benign) 不對配產品放置於粉塵混合#1 的環境中，持續 1 小時。
17.Mixed Flowing Gas 混合氣體測試	After testing, no damage, Contact Resistance: 20 mΩ max. 測試後產品無損壞， 接觸阻抗：接觸阻抗最大 20mΩ Per EIA-364-65 適用：EIA-364-65	Class - IIA , Half of samples mated for 336 hours, half of samples unmated for 168 hours, then mated for final 168 hours. Duration - 14 days 等級-IIA, 一半的樣本交配336小時，另一半的樣 本未交配168小時，然後再交配最後168小時。 持續時間 - 14天



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Table II: Product Qualification Test Sequence

附表二：產品測試順序

Test Description 測 試 描 述	Test Group 測試分組					
	A	B	C	I	K	L
1. Confirmation of Product 產品確認	1,9	1,20	1,15	1,13	1,	1,5
2. Contact Resistance 接觸阻抗	2,6,8	2,8,10,14,16,19	2,4,8,10,12,14	2,6,8,10,12		2,4
3. Insulation Resistance 絕緣阻抗		3,11,17				
4. Dielectric Withstanding Voltage 耐電壓		4,12,18				
5. Durability (耐久性)			6			
6. Durability (Preconditioning) 耐久性(預處理)	4	6		4		
7. Contact Retention Force 端子保持力					2	
8. Mating /Un-mating Force 插入力/拔出力	3,5	5,7	5,7	3,5		
9. Vibration (機械振動)			11,			
10. Mechanical Shock(機械衝擊)			13			
11. Thermal Shock (溫度沖擊)		9				
12. Humidity-Temperature Cycle 溫濕度循環		15				
13. Salt Spray(鹽霧)						3
14. High Temperature Life 高溫老化	7	7				
15. High Temperature Life (Preconditioning) 高溫老化(預處理)			3	7		
16. Dust (防塵測試)		13	9	11		
17. Mixed Flowing Gas 混合氣體測試				9		
樣品數	5	5	5	5	5	5