

# PRODUCT SPECIFICATION

PSA-WP-XXM(F)2-XX

Rev.A Sheet 10F5

**Title:** Waterproof connector, Power Dim, Plug & Receptacle, M8&M9

**Part Number:** WP-XXM2-XX, WP-XXF2-XX

**Description:** Waterproof connector, Power DIM, Solder type

## Revision Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	Initial Release	Hulk Chang	Fido Weng	10/16/2008'

## Product Specification Origination

Originator Date	Checked by Date	Approved By Date

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## 1. SCOPE

This specification covers performance, tests and quality requirements for [WATERPROOF Connector](#), [Power DIM](#),

## 2. APPLICABLE DOCUMENTS

The following document of the latest issue in effect at the time of performance of the qualification tests, shall form a part of this specification to the extent specified herewith.

### Military

MIL-STD-202 Test methods for electrical connectors

### Underwriters' Laboratories, Inc.

UL-STD-94 Tests for flammability of plastic materials for in devices and appliances.

UL-STD-1581 Reference standard for electrical wires, cables and Flexible cords.

## 3. Material & Finish

### 3.1 Plug

Part Name	Material/Finish
Insulator	PBT 30%GF , UL94V-0, Black
Contact	Brass , 10 $\mu$ " Gold Plated Over Nickel
Shell	Brass, Nickel plated
NUT	Brass, Nickel plated
O-Ring	EPDM

### 3.2 Receptacle

Part Name	Material/Finish
Insulator	PBT 30%GF , UL94V-0, Black
Contact	Brass , 10 $\mu$ " Gold Plated Over Nickel
NUT	Brass, Nickel plated
O-Ring	EPDM

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## 4. RATINGS

Rated current	5A
Operating Temperature	-20°C ~ +85°C

## 5. REQUIREMENTS

### ELECTRICAL PERFORMANCE

No.	Test Item	Requirement	Test Condition
1	Contact resistance	Initial : 10mΩ(Max.) Final : 20mΩ(Max.)	Mated connectors, Contact: measure by dry circuit, 20 m Volts maximum., 10mA. (ANSI/EIA-364-06B)
2	Insulation resistance	Initial : 1000MΩ(Min.) Final : 500MΩ(Min.)	Mate the plug and receptacle connector together, then apply 500V DC between the neighboring contacts in accordance with (ANSI/EIA 364-21C)
3	Dielectric Withstanding Voltage	No Breakdown on appearance	500V AC (rms) applied for 1 minute in accordance with (ANS/EIA-364-20C, Method A)

### MECHANICAL PERFORMANCE

No.	Test Item	Requirement	Test Condition
1	Contact Mating force	3kgf Max	Measure of initial and mating/ un-mating 30 <sup>th</sup> cycles at a speed 25±3mm/min. along — the mating axis.
2	Contact UN-mating force	0.5kgf Min	

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3	Contact retention force per pin	Plug: 8kgf Min. Receptacle: 8kgf Min.	Mating/ un-mating speed of 25±3mm/min. Measure the force when the contact dislodges the connector.
4	Durability	Contact resistance: 20mΩ Max.	Repeat mating and unmating 2000cycle at a speed 25±3mm/min. along the mating axis.

## ENVIRONMENTAL PERFORMANCE

No.	Test Item	Requirement	Test Condition
1	Thermal shock	Contact resistance: 20mΩ Max.	Mated receptacle & plug connector, Then apply the following environment in accordance with MIL-STD-202, Method 107. Condition B  Test cycles: 5 cycles Temperature: -55℃ (30min.) → 85℃ (30min.) Transition time: 5min. (Max.)
2	High Temperature life	Contact resistance: 20mΩ Max. Insulation resistance: 500MΩ Min	Mated receptacle & plug connector, Then apply the following High Temperature life in accordance with MIL-STD-202, Method 108. Condition B  Temperature : 85±2 ℃ Duration : 96hours
3	Humidity ( steady state)	Contact resistance: 20mΩ Max. Insulation resistance: 500MΩ Min.	Mated receptacle & plug connector, Then apply the following Humidity in accordance with MIL-STD-202, Method 103. Condition A  Temperature : 40±2 ℃ Relative humidity : 90~95% Duration : 96hours

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4	Humidity (cycling)	Contact resistance: 20mΩ Max. Insulation resistance: 500MΩ Min.	Mated receptacle & plug connector, Then apply the following humidity in accordance with MIL-STD-202, Method 106.  Temperature : 25°C~65°C Humidity : 90~98%RH No of cycles : 4 cycles (96 hours)
5	Salt water spray	Contact resistance: 20mΩ Max.	Mated receptacle & plug connector, Then apply the following environment in accordance with MIL-STD-202, Method 101, condition B. Temperature : 35°C Salt water density : 5±1% Duration : 48hours
6	Solder ability	More than 95%of the dipped surface shell be evenly wet.	Dip the solder tine of the contact in the solder bath at 245±5°C for 5±0.5 sec. After Immersing the tine in the flux of RAM or R type for 5 to 10 seconds in accordance with MIL-STD-202, Method 208.
7	Water proof	Protection against ingress water	Ambient temperature: 25+/- 3°C Relative humidity: 55+/-120%RH The lowest point of enclosures with a hight less than 850 mm is located 1000mm below the surface of the water. Test duration: 30minutes. (IEC 60529 Edition 2.1:2001-02-IPX8)