

Plasma Module Specification

Model: M1801

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Approved Approve	Reviewed Check	Prepared Prepare

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1 Product Overview

The plasma generator uses pulse and oscillator circuits to raise low voltage to high-voltage AC. Through the positive and negative high-voltage AC applied to two different electrodes, positive ions (H^+) and negative ions (O_2^-) are generated at the same time. H^+ and O_2^- react chemically on the surface of particulates to form OH radicals, which extract H^+ from proteins in airborne bacteria, inactivating them and achieving a sterilization effect.

2 Appearance and Structure

2.1 Overall View

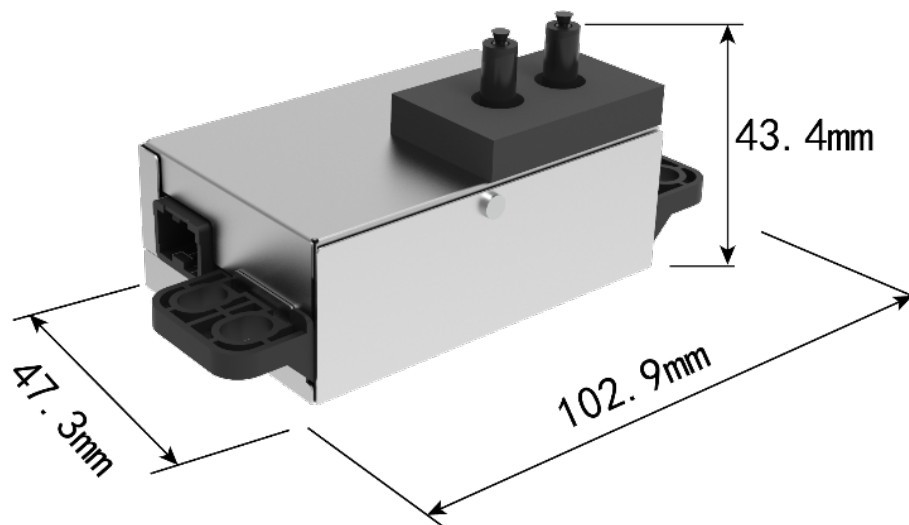


Figure 2-1 Plasma Module Overall View

2.2 Exploded View

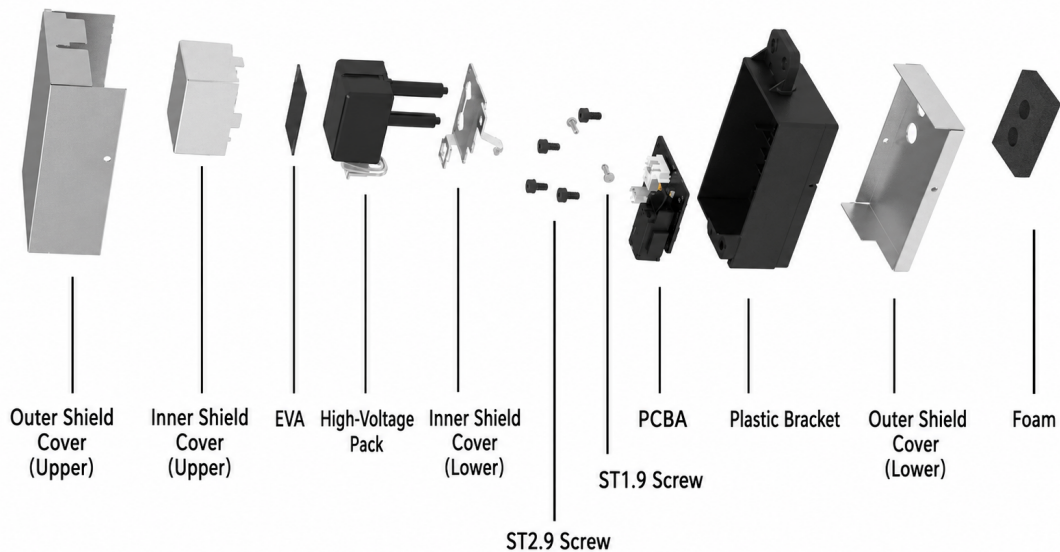


Figure 2-2 Plasma Module Exploded View

3 System Parameters

Item	Content	
Product function	Positive ion/negative ion generator.	
Guarantee Operating Voltage	DC 10~16V	
Current consumption	Rated current value : 10mA (at 12V) 25°C±5°C	
	Maximum current value : 50mA (at 12V) -30~80°C	
Weight	As per drawing instructions	
Actuating condition	Sterilizing terminal	Operating voltage: below 2.5V (at 10V)
		OFF leakage current: less than 50uA
Ion concentration	Initial stage	
	Positive ion	≥5,000,000/ c c
	Negative ion	≥5,000,000/ c c
	After durability	
	Positive ion	≥2,000,000/ c c
	Negative ion	≥2,000,000/ c c
Ozone concentration	<50ppb (The equivalent concentration after one hour in a space of 2.5 m3)	
Noise	Noise: less than 32db (A), no harmful noise.	

Table 3-1 Electrical and Ion Performance Parameters

Item	Content	
Installation Location	HVAC VENT duct	
Installation Environment	Dust	Dust or dirt (Equivalent to JIS D-0207-C1)
	Wetting	Presence of condensation, will not be water, presence of car air conditioning cleaning deodorant.
Operating Temperature	-30°C ~ +80°C	
Storage Temperature	-40°C ~ +85°C	
Service Voltage Range	Steady state	DC10.0V~16.0V
	Transient	18V 1 hour
		24V 1 min.
Vibration	5~500Hz, 34.3m/s ² (3.5G) {MAX}	
Durability Requirements	12600h	

Table 3-2 Installation and Environmental Parameters

4 System Function Description

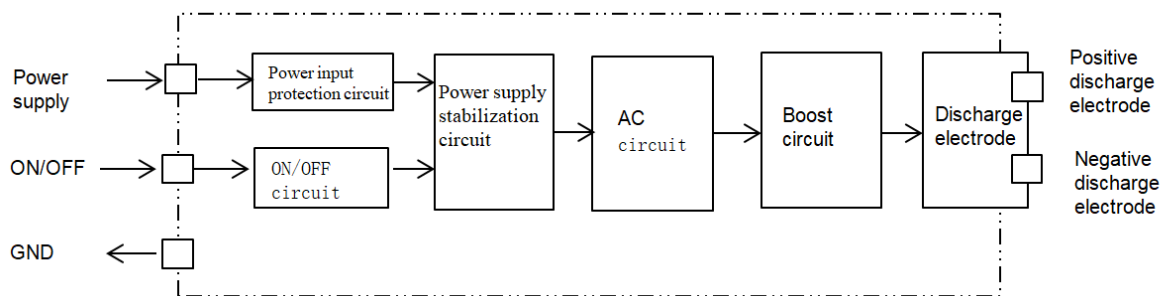
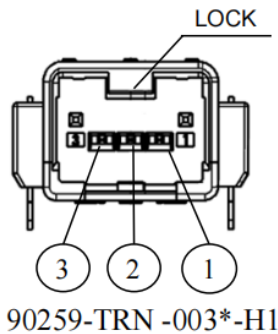


Figure 4-1 Plasma Module Functional Block Diagram

The module receives power, ON/OFF control, and GND connections. The power input protection circuit and ON/OFF circuit feed the power supply stabilization stage, followed by the AC circuit and boost circuit. The discharge electrode then drives the positive and negative discharge electrodes.

5 Connector Information



No.	Terminal Name	Description	Maximum electrical current(mA)
1	AC MAIN	AC MAIN power	50
2	ION	ION ON/OFF Controls	5
3	GND	GND	45

Connector :
 90259-TRN -003*-H1
 (CP 3P 025(0.64) ML(SMT))

Mating Connector:
 90262-SMG -003*-H1
 (CP_3P_025_F)

Figure 5-1 Connector and Terminal Definition

6 Core Advantages and Application Scenarios

- High-concentration purification: positive and negative ion concentration >5 million PCS/cm³, rapidly decomposes formaldehyde, secondhand smoke, and other pollutants.
- Safe and low power consumption: standby current ≤0.1 mA; ozone concentration <0.05 PPM, meeting national standard certification requirements with no ozone hazard.
- Wide-temperature adaptability: -40 to 85 deg C operating temperature, suitable for automotive, industrial, and other application environments.