

Instruction Manual

CPM (Charged Plate Monitor)

SCM-10N

☐ Kor

☒ Eng

☐ Jap

☐ Chi

☐ Tai

SUNJE

Product Warranty Certificate

Sunje Co., Ltd. provides product warranty as follows in accordance with the Consumer Dispute Resolution Standards.

Product Name	CPM		
Model Name			
Serial No.			
Purchase Date	Year	Month	Day
Customer Name	TEL.		
Warranty Period	One year from the date of purchase		

1. If a malfunction occurs due to a manufacturing defect during the warranty period while the product is being used normally, free service will be provided.
2. In case of malfunction, please contact us.
 - ▶ Sales Department: Tel) 82-31-203-9034
3. Even during the warranty period, repairs will be charged in the following cases:
 - ▶ Malfunctions caused by user negligence, improper repair, or modification
 - ▶ Malfunctions resulting from failure to follow the instructions specified in the user manual
4. After the warranty period has expired, paid repair service is available.
5. When requesting repair, please present this warranty certificate with the purchase date indicated.
6. The warranty certificate will not be reissued, so please keep it safe.

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1 Please read carefully before use

- Thank you for purchasing Sunje's SCM-10N.
- This product is designed and manufactured as industrial equipment.
- Please read the product manual thoroughly before handling the product.
- Please keep this manual in an easily accessible place for future reference.
- Our company is not responsible for any accidents caused by failure to follow the instructions and precautions in this manual.

[**DANGER**] Indicates a potentially hazardous situation which, if not avoided, could result in serious accidents.

[**WARNING**] Indicates a potentially hazardous situation which, if not avoided, could result in severe personal injury or property damage.

[**CAUTION**] Indicates a potentially hazardous situation which, if not avoided, could result in minor personal injury or property damage.

[**DANGER**]

*** Grounding Required:** As this product is industrial equipment, it must be grounded before use for safety and accurate measurement. Failure to ground the device may cause electric shock or fire, as well as fatal equipment malfunction, so please pay special attention.

*** No Arbitrary Modification or Repair:** Do not arbitrarily modify or repair the product. There is a risk of malfunction, electric shock, and fire. If repairs are needed, please contact us.

*** void Water Contact:** Keep the product away from water. There is a risk of malfunction, electric shock, and fire due to abnormal operation.

*** Disconnect Power for Inspection:** Always disconnect the main power before inspecting or maintaining the product. There is a risk of electric shock and fire.

*** Secure Mounting:** Mount the product firmly and securely.
There is a risk of serious accidents if the product falls or drops.

*** No Contact During High Voltage Application:** Do not touch the measuring plate during measurements (such as Decay time measurement) as high voltage is applied.
There is a risk of electric shock and abnormal operation.

*** Do Not Use Near Hazardous Materials:** Never use the product in areas with flammable or combustible hazardous materials. This equipment is not explosion-proof.

[**WARNING**]

*** Pre-operation Safety Check:** Always check the safety status of the equipment before supplying power and operating the product. Careless power supply may result in electric shock and safety accidents.

*** Power and Communication Cable Management:** Immediately replace power and communication cables if they are damaged. It may cause abnormal operation due to electrical leakage and communication failure.

- * **Do Not Use Damaged Power Cords:** Never use power cords with stripped insulation, damage, or arbitrary modifications. It may cause electric shock, fire, or malfunction.
- * **Disconnect Power for Cleaning:** For safety, always turn off the power switch and completely disconnect the power plug from the outlet when cleaning the equipment.
- * **Operation by Unskilled Personnel Prohibited:** Operators must fully understand how to use the equipment to prevent risks. Unskilled personnel should not operate the equipment due to the risk of electric shock.

[CAUTION]

- * **Do Not Use for Unintended Purposes:** Do not use the product for purposes other than static electricity measurement (ion balance, decay time measurement, etc.). Doing so may cause malfunction, shorten lifespan, and lead to unexpected problems.
- * **Avoid Plate Contamination and Damage:** Handle the measuring plate with extreme care to prevent scratches or foreign substances on the surface. This can cause measurement errors.
- * **Observe Clearance Distance:** For accurate measurements, ensure the minimum clearance distance specified in the manual from surrounding structures (grounded conductors) and power cables when installing.
- * **Correct Wiring Connection:** Connect wires after checking the installation method in the manual. Incorrect wiring may cause malfunction and abnormal operation.
- * **Prevent Cable Disconnection:** Be careful not to bend or break the power and communication cables of each product.

2 Product Overview and Key Features

■ Product Overview

The SCM-10N is a multi-channel system that enables the integrated management of multiple ionizers' performance at once, supporting the simultaneous connection of up to 8 units. It provides real-time performance measurement and precise data logging, realizing systematic static electricity management through data analysis using a PC program.

■ Key Features



Real-time monitoring of ionizer static elimination performance



Simultaneous monitoring of up to 8 units and easy expansion to large-scale systems



Remote monitoring enabled via LAN communication support



Data storage and analysis through PC program integration

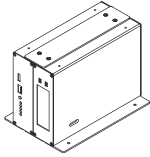


Customizable measurement cycle settings

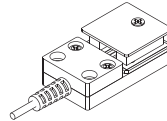
3 Checking Package Contents

► Product Components

The product package includes the following components.



- * CPM
SCM-10C(Control Module)1ea
SCM-10H(H/V Module)1~8ea
Link PCB
(Included in SCM-10H)



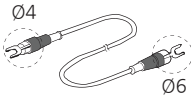
- * Plate25*25mm_
Straight)
SCP-MT-1-001
1ea

Capacitance: 5 pF

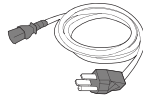


- * Adapter
SAD-MT-3-001
INPUT: AC100~240V, 50/60Hz
OUTPUT: DC24V, 2.5A
1.6m, 1ea

※ Use only the provided dedicated adapter. We are not responsible for any problems caused by using other products.

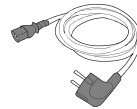


- * Ground Cable
(3m / Ø4-Ø6)
SGC-MT-4-002
1ea



- * Power Cable
(AC100V, 50/60Hz,1.8m)
SPC-MT-1-001
1ea

or

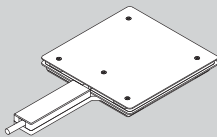


- * Power Cable
(AC2200V, 50/60Hz,1.8m)
SPC-MT-2-001
1ea

► Optional Components

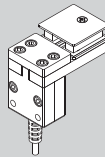
For additional functions beyond the basic product configuration, you can separately purchase the following item.

Capacitance: 20 pF $\pm$ 2 pF
(Compliant with
ANSI/ESD STM3.1 standard)



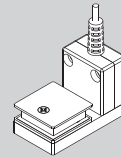
- * Plate (150*150mm)
SCP-MT-1-002
1ea

Capacitance: 5 pF



- * Plate (25*25mm
_Elbow)
SCP-MT-1-003

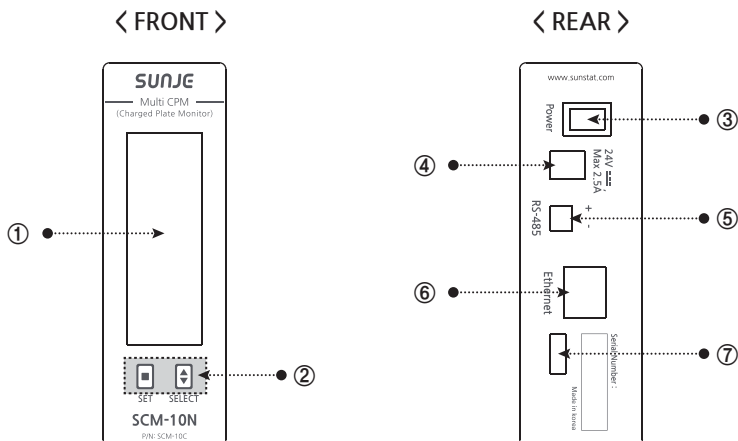
Capacitance: 5 pF



- * Plate (25*25mm
_Reverse Elbow)
SCP-MT-1-004

4 Part Names

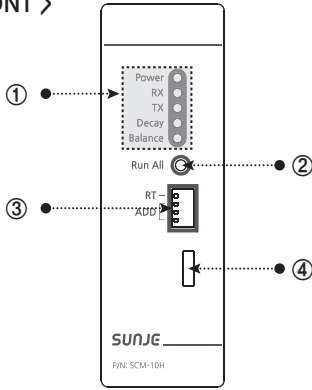
► SCM-10C (Control Module)



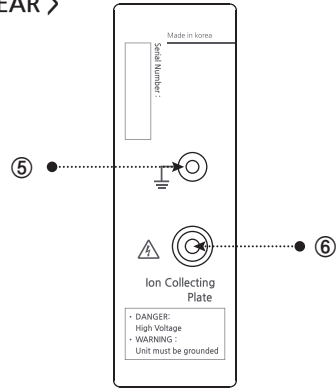
No.	Name	Type	Function
①	Display	LCD	Displays operational status such as measurement data and settings.
②	Button (2EA)	Tact switch	Switches for configuring settings and executing operations (Detailed operations are displayed on the LCD).
③	Power Switch	Rocker switch	Product Power On/Off
④	Power Input	DC Power Jack	Center: +24V DC / Outer Shell: GND (Outer diameter 5.5mm / Inner diameter 2.1mm)
⑤	Communication Terminal (RS-485)	2-Pin Terminal Block (EC350V-02P / Dinkle)	Terminal for RS-485 communication (Caution: Check +, - connections) 
⑥	Communication Terminal (Ethernet)	RJ45 Standard Port	Standard LAN cable specifications (10/100 Mbps)
⑦	Firmware Update Port	-	Dedicated port for device maintenance and firmware updates.

► SCM-10H (H/V Module)

< FRONT >



< REAR >



No.	Name	Type	Function
①	Display	LED (5ea)	• Power (System Status Indicator (Heartbeat)) : Blinks at 1-second intervals, indicating that the MCU (controller) is operating normally. ※ Caution: If the LED remains continuously ON or OFF without blinking, the equipment requires inspection. • RX / TX (Communication Status Indicator) : Blinks rapidly when transmitting (Tx) or receiving (Rx) data with the upper MCU module. • Decay LED (Decay Measurement Status Indicator) : Turns ON during decay time measurement. Turns OFF when the measurement is complete. • Balance LED (Balance Measurement Status Indicator) : Turns ON during ion balance measurement. Turns OFF when the measurement is complete.
②	Auto Measurement Run Button	Tact switch	Run All : The entire measurement sequence of the module is executed automatically (in the order of Balance → Decay).
③	Setting Switch	4-Pin DIP Switch	Switch for assigning the module's communication ID and activating the terminating resistor.
④	Firmware Update Port	-	Dedicated port for device maintenance and firmware updates.
⑤	Plate Connection Terminal	Coaxial Connector	Terminal for connecting the plate to the main body (uses a dedicated cable).
⑥	Ground Terminal	Binding Post (M4 size)	Frame Ground

5 Installation and Connection

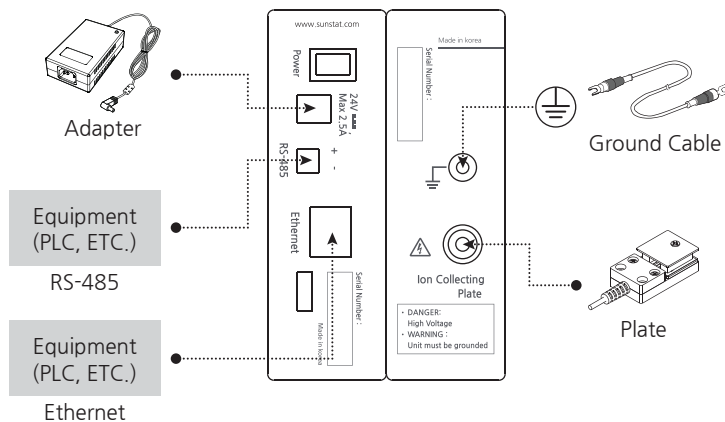
[CAUTION]

- * Install according to the operating environment. The installation site must be a flat surface.
- * Do not install in high temperature or high humidity environments.
- * Static elimination performance may degrade depending on the surrounding environment.
Install the product considering the surrounding environment of the static elimination target.
- * Check the power specifications and supply the correct power.
Incorrect connection may cause fire or electric shock.
- * For accurate operation, it must be grounded before use.

Failure to ground the product may cause fluctuations in measurement values.

► Connection Method

Refer to the diagram below to connect the product.



► [Must Read] Precautions for Plate Installation and Handling

- 1) If foreign substances such as fingerprints (oil) or dust adhere to the plate surface, leakage current may occur. This causes errors, such as the Decay Time being measured faster or slower than the actual value.

※ Never touch the surface with bare hands when installing or moving the plate.
Always wear cleanroom gloves and handle the plate by holding only its edges.

2) Observe Clearance Distance During Installation (Prevention of Measurement Errors)

For accurate measurement, minimize factors that can induce static electricity or generate noise around the plate and along the wiring route. If it is too close to surrounding conductors, parasitic capacitance may occur, causing errors in measurement values (such as Decay Time). Therefore, you must strictly follow the installation and wiring standards below.

* Plate Installation Standards

Clearance from surrounding structures: Ensure a minimum clearance distance of at least 10mm from grounded conductors (control panel frames, surrounding metal structures, etc.).

* Cable Wiring Standards

Clearance from power lines: To prevent noise interference, route the cables at a distance of at least 300mm from the power cables of driving equipment.

Countermeasures for unavoidable close routing: If wiring must follow the same route as power cables due to space constraints within the facility, you must protect the cable and block noise ingress by applying a Shield Hook Band, etc.

3) Precautions for Wiring Connection Cables

The coaxial cable connecting the plate and the main unit transmits high-impedance signals, so special attention is required for the wiring environment.

- * Ensure that the plate connection cable is not placed parallel to high-voltage lines or power cables that generate noise.

- * Handle the cable with care, as excessively bending or pulling it may damage the internal core wires, resulting in unstable measurement values.

4) Prevention of Vibration and Shaking

If vibration or shaking occurs on the plate during measurement, charges may be generated due to the triboelectric effect, leading to measurement errors. Ensure the plate is firmly secured before use.

► Plate Maintenance and Management

- * Periodically check the plate surface for contamination.

- * If the surface is contaminated, gently wipe it with a lint-free wiper moistened with IPA (Isopropyl Alcohol). After cleaning, it must be completely dried before use.

- ※ Caution: Never use strong chemical solvents such as acetone, as they may damage the device.

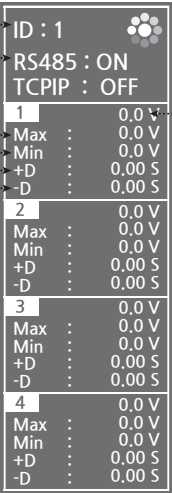
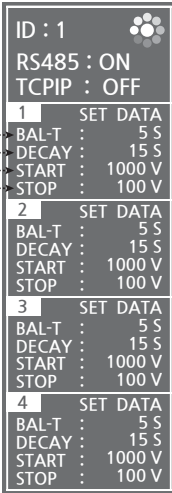
6 Basic Configuration Screen and Settings

► System Configuration

The entire system is designed with a hierarchical network structure where the upper control system (PLC/PC) controls the SCM-10C (Control Module), and the SCM-10C integrally manages the subordinate SCM-10H (H/V Modules).

- * Upper System: Consists of a PLC or PC. It transmits measurement commands to the SCM-10C (Control Module) and monitors and manages the collected data.
- * SCM-10C (Control Module): Acts as a gateway that receives commands from the upper system, transmits them to all connected SCM-10H (H/V Modules), collects the measurement results from each module, and transmits them to the upper system.
- * SCM-10H (H/V Module): The actual sensor unit installed around the ionizer to directly measure the plate voltage and decay time. Up to 8 units can be connected per SCM-10C (Control Module).

► Main Screen

Upon Power On	Basic Screen	When pressing the SET button on the basic screen
 ① → SCM10N ② → V260123	 ① ID : 1 ② RS485 : ON TCP/IP : OFF ③ 1 0.0 V ④ Max : 0.0 V ⑤ Min : 0.0 V ⑥ +D : 0.00 S ⑦ -D : 0.00 S 2 0.0 V Max : 0.0 V Min : 0.0 V +D : 0.00 S -D : 0.00 S 3 0.0 V Max : 0.0 V Min : 0.0 V +D : 0.00 S -D : 0.00 S 4 0.0 V Max : 0.0 V Min : 0.0 V +D : 0.00 S -D : 0.00 S	 ① ID : 1 ② RS485 : ON TCP/IP : OFF ③ 1 SET DATA ④ BAL-T : 5 S DECAY : 15 S START : 1000 V STOP : 100 V 2 SET DATA BAL-T : 5 S DECAY : 15 S START : 1000 V STOP : 100 V 3 SET DATA BAL-T : 5 S DECAY : 15 S START : 1000 V STOP : 100 V 4 SET DATA BAL-T : 5 S DECAY : 15 S START : 1000 V STOP : 100 V
① : Model Name ② : Version	① : ID ② : Communication operation status indicator ③ : Plate Voltage (Balance) ④ : Plate Voltage (Max.) ⑤ : Plate Voltage (Min.) ⑥ : + Decay Time ⑦ : - Decay Time	① : Balance Measurement Time ② : Decay Measurement Time ③ : Decay Start Voltage ④ : Decay Stop Voltage

► Setting Screen

MENU	
1 : SET ID	ID : 1
19200 bps	
2 : SUB NUM	NUM : 5
4 : NETWORK	IP : 192.168.
	000.007
PORT : 8234	



■ Operating Instructions

Entering the setting screen: Press and hold the [SET] button for about 2 seconds to enter the setting screen.

Moving between items and changing values: Press the [SET] button briefly to move to the desired item, and press the [SELECT] button to change the setting value.

■ Detailed Description of the Setting Menu

1. SET ID (Communication ID Setting)

Sets the communication ID of the SCM-10N device. (Setting range: 1 ~ 8)

2. SUB NUM (Number of SCM-10H (H/V Modules))

The number of SCM-10H (H/V modules) connected to the main unit.
(Maximum quantity: 8 units)

4. NETWORK (Network / Ethernet Setting)

Please configure the network settings using the dedicated PC program rather than the device's built-in buttons.

■ Ethernet Configuration Method

To configure Ethernet communication, a separate PC program must be used.
Please proceed with the configuration according to the procedure below.

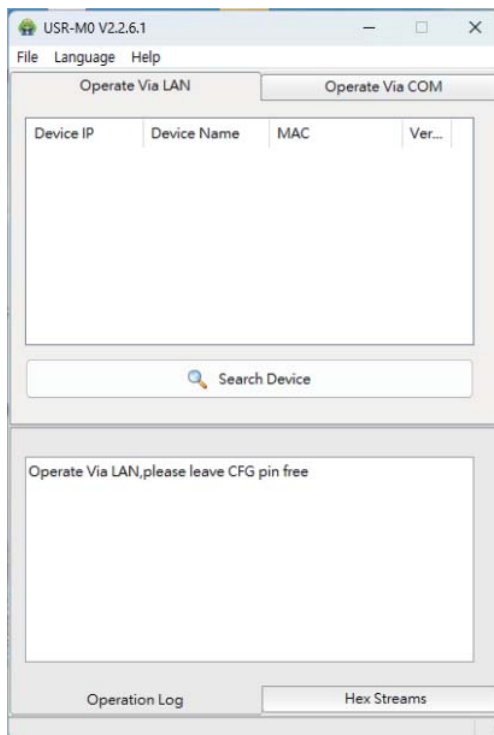
1. Preparation

- * Configuration Program: USR-MO V2.2.6.1 (or higher version)
- * Hardware Connection: Connect the PC and the Ethernet port of the SCM-10N main unit with a LAN cable.
- * Power Status: DC 24V power must be properly supplied to the product.

2. Step-by-Step Configuration Method

[Step 1] Running the Program and Searching for Devices

- 1) Run the USR-MO program on the PC.
- 2) Select the [Operate Via LAN] tab from the top menu.
- 3) Click the [Search Device] button at the bottom left to search for SCM-10N devices connected to the network.
- 4) Click on the device you want to configure from the searched device list (Device IP, MAC address, etc.).



[Step 2] Base Param Configuration

When a device is selected, the current settings appear in the right window. Modify the following items according to your network environment.

- IP Type: Static IP (When using a static IP)
- Module Static IP: Enter the IP address to be changed (e.g., 192.168.0.7)
- Subnet Mask: Enter the subnet mask (e.g., 255.255.255.0)
- Gateway: Enter the gateway address (e.g., 192.168.0.1)
- DNS Address: Enter if necessary (the default value can be maintained)

[Step 3] Port Param Verification

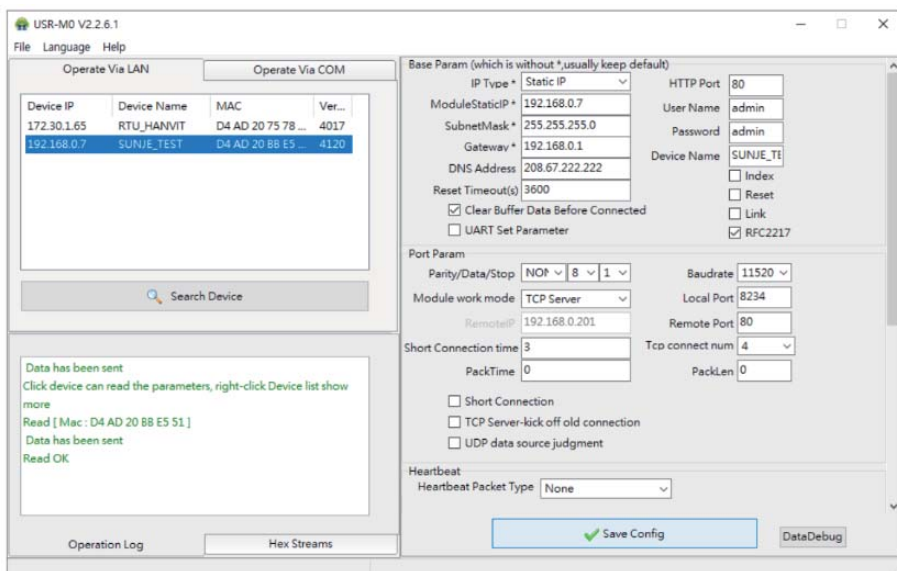
Check the settings below for normal data communication.

(It is generally recommended to keep the initial default values.)

- Module work mode: TCP Server
- Local Port: 8234 (Device default port)
- Remote Port: 0 (or a setting value according to system requirements)

[Step 4] Saving and Applying Settings

- 1) Once all entries are complete, click the [Save Config] button at the bottom right.
- 2) Check if "Data has been sent" or a success message is displayed in the Operation Log window at the bottom.
- 3) After the settings are applied (device reboots), click [Search Device] again to finally verify that the device is properly found with the changed IP address.



3. Precautions and Troubleshooting (FAQ)

- 1) Check Network Band: For smooth discovery, the IP band of the PC attempting configuration must match the initial IP band of the SCM-10N. If the initial discovery fails, temporarily change the PC's IP address to the 192.168.0.xxx band and try again.
- 2) Check Firewall and Security Programs: If the device continues to not be discovered by the program, please check if Windows Firewall or an antivirus program is blocking the software's communication.
- 3) Duplicate IP Caution: Please check in advance to ensure the IP address you are trying to set does not duplicate that of other devices on the current network.

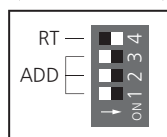
► ID and Termination Resistor Settings (DIP Switch)

Hardware settings for the communication ID and termination resistor are configured using the 4-pin ID DIP switch located on the front of the SCM-10H (CPM module).

* Switches 1 ~ 3: Device ID Setting (RS-485 Address)

* Switch 4: Termination Resistor Setting

< 4Pin DIP Switch >



Setting Item	SW1	SW2	SW3	SW4 (Term, Res)
ID : 1	OFF	OFF	OFF	-
ID : 2	ON	OFF	OFF	-
ID : 3	OFF	ON	OFF	-
ID : 4	ON	ON	OFF	-
ID : 5	OFF	OFF	ON	-
ID : 6	ON	OFF	ON	-
ID : 7	OFF	ON	ON	-
ID : 8	ON	ON	ON	-
Termination Resistor ON	-	-	-	ON
Termination Resistor OFF	-	-	-	OFF

※ Precautions for Device ID Setting

When using multiple modules connected together, combine switches 1~3 to set each one differently so that the communication IDs of the modules do not duplicate each other.

※ Precautions for Termination Resistor Setting

For the module connected at the very end (termination) of the communication line, you must change switch 4 to ON to activate the termination resistor. This suppresses reflection noise of communication signals and ensures communication stability.

(Maintain other intermediate modules in the OFF state)

7 Operation and Measurement Methods

► Local Control

When you press the Run All [Auto Measurement Run] button on the front of the SCM-10H (H/V module), the automatic measurement proceeds in the following sequence.

1) Check Standby Status

The Power LED blinks at 1-second intervals, indicating that the device is in normal standby and operation mode.

2) Start Measurement

Press the Run All [Auto Measurement Run] button on the front of the device once.

3) Balance Measurement in Progress

The Balance LED turns ON, and the ion balance measurement starts.

When the measurement is complete, the LED turns OFF.

4) Decay Measurement in Progress

As soon as the balance measurement is completed, the Decay LED turns ON, and the static elimination speed (decay) measurement starts. When the measurement is complete, the LED turns OFF.

5) Measurement Complete

When both the Balance and Decay LEDs turn OFF, the entire measurement sequence has been successfully completed.

► Check Measurement Results

The SCM-10H (H/V module) only performs measurement operations in the field and does not have a display to show numerical values on the module itself.

Please check the specific measurement data (voltage value (V), time (sec), etc.) through the LCD screen of the SCM-10C (Module module) connected to this device.

► Importance of Ion Balance Measurement and Management Standards

1) Compliance with International Standards

The ion balance measurement method of this device meets the Floating Plate requirements of the international electrostatic association standards ANSI/ESD-STM3.1 and IEC 61340-5-1.

2) Measurement Purpose

It measures the balance (offset voltage) of positive (+) and negative (-) ions emitted from the ionizer. If the ion balance is disrupted, static electricity can be reversely induced into the target object, potentially causing Charged Board Event (CBE) or Field Induced Model (FIM) damage. Therefore, thorough management is required.

3) Recommended Management Standards Based on International Standards (ANSI)

Ion balance (offset voltage) management standard: Maintain below $\pm 35\text{V}$
(Based on ANSI/ESD S20.20 standard)

※ Note: If the process handles highly sensitive Electrostatic Discharge Sensitive (ESDS) devices under HBM 100V, or if the customer has stricter internal static electricity management guidelines (in-house specifications) in place, please apply those standards as a top priority.

► **Importance of Decay Time Measurement and Management Standards**

1) Compliance with International Standards

Supports the Charge Decay Performance evaluation criteria according to the ANSI/ESD-STM3.1 standard. (Generally, it measures the time it takes for an initial charge voltage of $\pm 1000V$ to decay to $\pm 100V$, which is the 10% level.)

2) Measurement Purpose

It quantifies the speed and efficiency of how quickly the ionizer can neutralize (eliminate) static electricity on the target object. If the static elimination speed is slower than the process speed, re-charging of static electricity may occur during product movement, so proper decay time management tailored to the process is essential.

3) Recommended Management Standards by Industry

General static elimination performance guide: Discharge within 1.0 to 2.0 seconds recommended.

High-speed automation and logistics process lines: Rapid static elimination performance within 0.5 seconds required, considering the tact time of fast-moving products.

8 Communication Protocol

This protocol defines the communication specifications between the upper system (PLC/PC) and the MCU module. The MCU module performs the role of collecting data from the subordinate connected SCM-10N modules and transmitting it to the upper system.

► **Communication Specifications**

Item	Specification
Interface	RS-485 (2-Wire), Ethernet
Protocol	Modbus RTU (Slave)
Baud Rate	19,200 bps (Fixed)
Data Bits	8 Data bits
Stop Bit	1 Stop bit
Parity	None
Slave ID	1 ~ 8 (MCU Module ID)

► **Address Calculation per Channel**

The MCU module sequentially allocates the data of each connected SCM-10N module (channel) into the internal memory map. The register address of each channel increases by 0x200 (512) based on the Base Address of CH1.

* Address Calculation Formula: Target Address = Base Address + (Channel - 1) × 0x200

Channel	Target Module	Start Address (Hex)	Remarks
CH 1	SCM-10N #1	0x8000	Base Address
CH 2	SCM-10N #2	0x8200	+ 0x200
CH 3	SCM-10N #3	0x8400	+ 0x400
CH 4	SCM-10N #4	0x8600	+ 0x600
...	...	...	...
CH 8	SCM-10N #8	0x8E00	+ 0xE00

► Register Map (Register Map - CH1 Base)

The table below is written based on CH1 (0x8000 ~). The upper system can access this address to read or write the data of module #1. (For other channels, please calculate the offset by applying the address calculation formula described earlier.)

Address(Hex)	Address	Data Name	Description	R/W
0x8000	32768	FIELD Value	Current field value (For real-time monitoring)	R
0x8001	32769	Balance Status	1 : Balance measurement complete	R
0x8002	32770	Balance Value	Balance measurement result value (-1500.0 ~ 1500.0V)	R
0x8003	32771	Peak Max	Maximum (+) peak voltage during measurement (Max)	R
0x8004	32772	Peak Mean	Average or reference voltage during measurement (Mean)	R
0x8005	32773	Balance Time	Balance measurement time setting (Saved) <Range: 10, 30, 5, 60 sec>	R/W
0x8008	32776	Decay Time Set	Total decay measurement time setting (Saved) <Range: 15, 30, 90, 180,360 sec>	R/W
0x800B	32779	Decay Time (+)	(+) Voltage decay measurement result time (in 0.1s units)	R
0x800C	32780	Decay Time (-)	(-) Voltage decay measurement result time (in 0.1s units)	R
0x8010	32784	Balance Run	1: Start Balance measurement Trigger)	R/W
0x8011	32785	Decay Run	1 : Start '+'/-' Decay measurement 2 : Start '+' Decay measurement 3 : Start '-' Decay measurement (Trigger)	R/W
0x8012	32786	Decay Status	1: Decay measurement complete	R

► Measurement Sequence and Control Method

This is the procedure by which the upper system controls and executes the measurement of a specific channel through the MCU module.

■ Setting Memory Features

- * Non-volatile storage: Balance Time and Decay Time setting values are stored in the internal memory of each CPM module, so the data is maintained even if the equipment power is turned off.
- * Independent setting: Independent measurement time values can be set for each channel (module). (e.g., CH1 can be set to 5 seconds, CH2 to 30 seconds)
- * Note: Perform the 'Time Setting' step only when changing the measurement time. If maintaining the existing settings, you can skip the 'Time Setting' process and proceed directly from the 'Command Transmission' step.

1) Balance Measurement (Ion Balance)

- ① Time Setting (if necessary): Set the measurement time at the Balance Time (0x8005) address. (Skip if maintaining existing settings)
- ② Command Transmission: Write 1 to the Balance Run (0x8010) address to start the measurement.
- ③ Standby: Wait until the Completion Flag (0x8001) is Set.
- ④ Read Result: After reading the Completion Flag, sequentially Read the Balance value (0x8002)..... to check the final result.

2) Decay Measurement (Decay Time)

- ① Time Setting (if necessary): Set the measurement time at the Decay Time Set (0x8008) address. (Select from 15, 30, 90, 180, 360)
- ② Command Transmission: Write 1 to the Decay Run (0x8011) address to start the measurement.
- ③ Standby: Wait for the Set Time. (e.g., wait for about 15 seconds when set to 15 seconds)
 - * Caution: The set time includes the entire sequence (preparation + measurement + cleanup), so you must check the results after the specified time has fully elapsed.
- ④ Completion Check: Check the status using a Polling method until the Decay Status (0x8012) value becomes 1, or wait sufficiently longer than the set time.
- ⑤ Read Result: Read the Decay Time + (0x800B) and Decay Time - (0x800C) values to check the static elimination speed.

※ Detailed Composition of Decay Operation Time (Time Breakdown)

The Decay Time setting value indicates the Total Cycle Time, and is internally divided and automatically executed as follows.

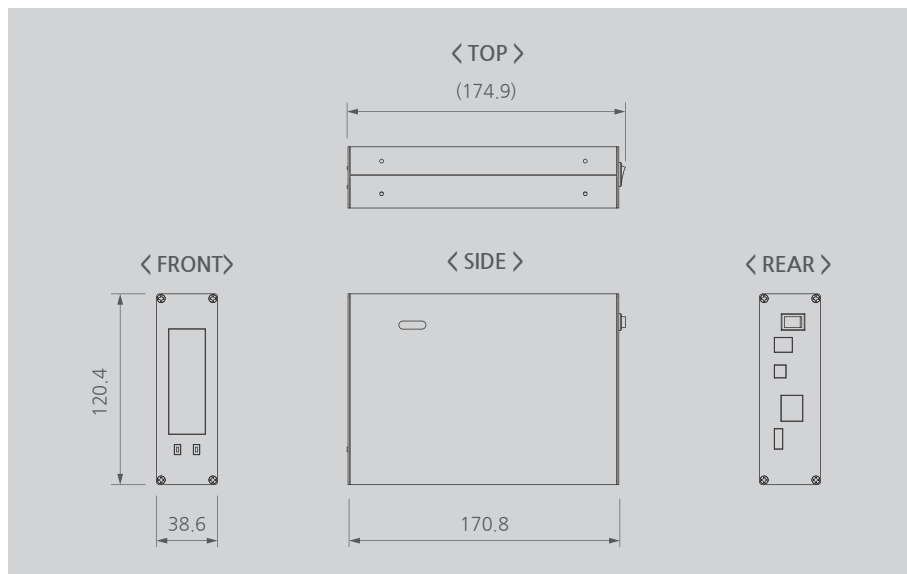
(Example) When set to 15 seconds (15s):

- * 5 seconds: Preparation and data cleanup after measurement ends (Prep/Cleanup)
- * 5 seconds: (+) Decay Time measurement (Positive Decay)
- * 5 seconds: (-) Decay Time measurement (Negative Decay)

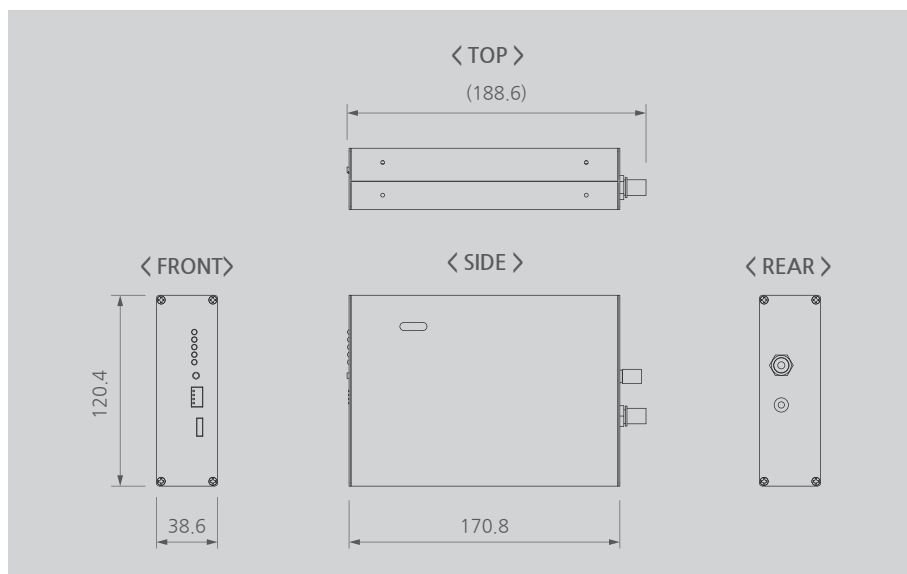


9 External Dimensions

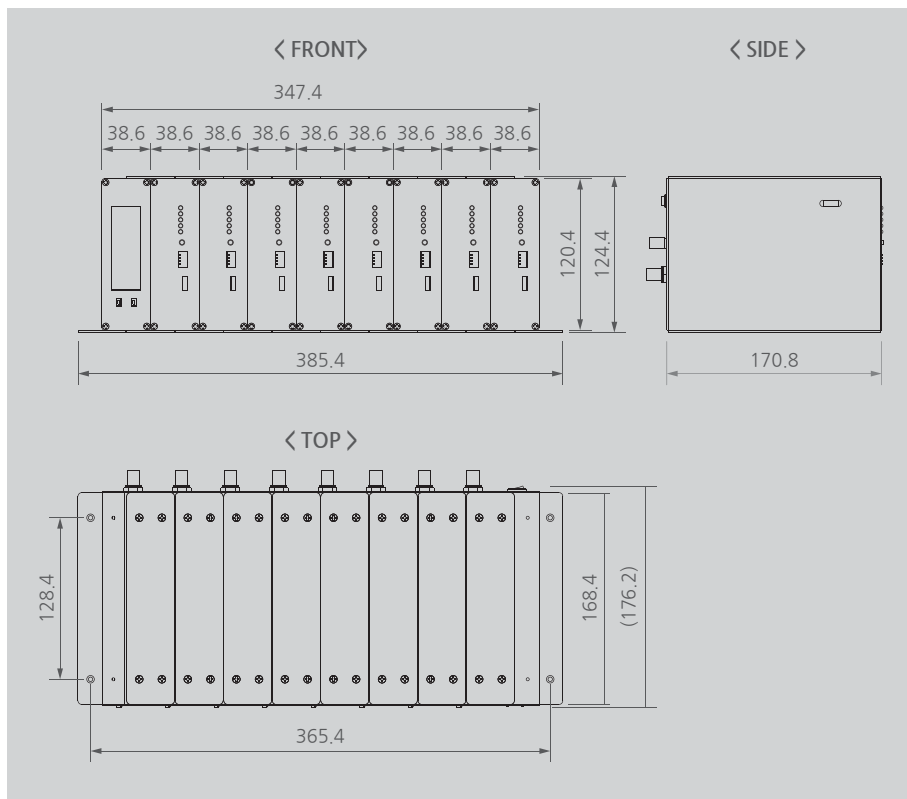
► SCM-10C (Control Module)



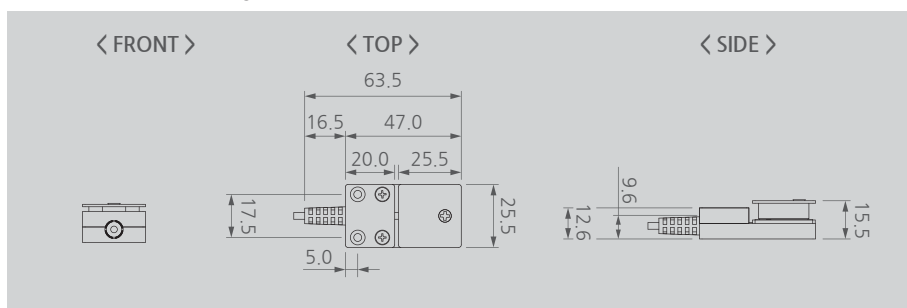
► SCM-10H (H/V Module)



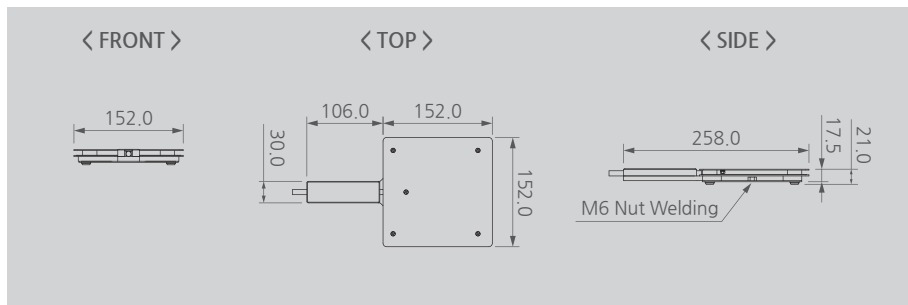
► SCM-10N (1:8 Type)



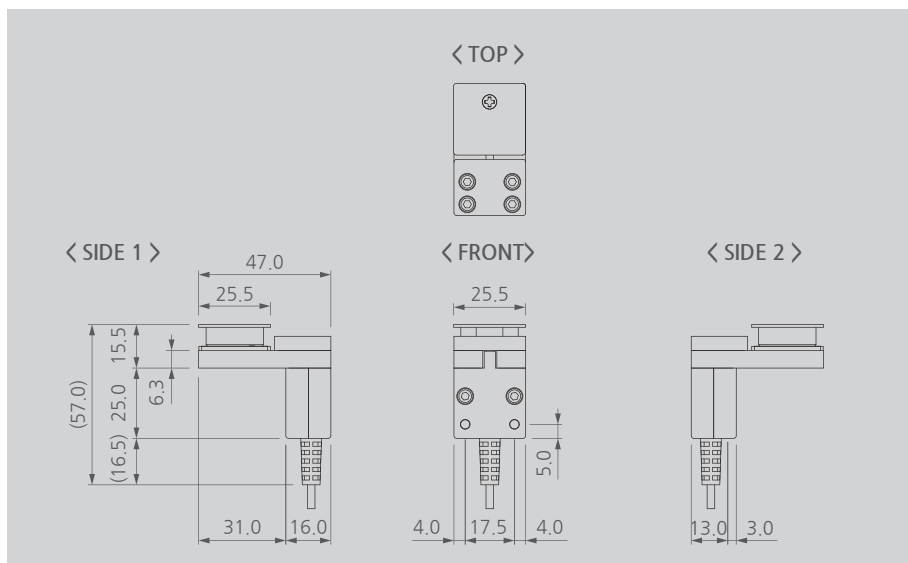
► Plate(25*25mm_Straight)



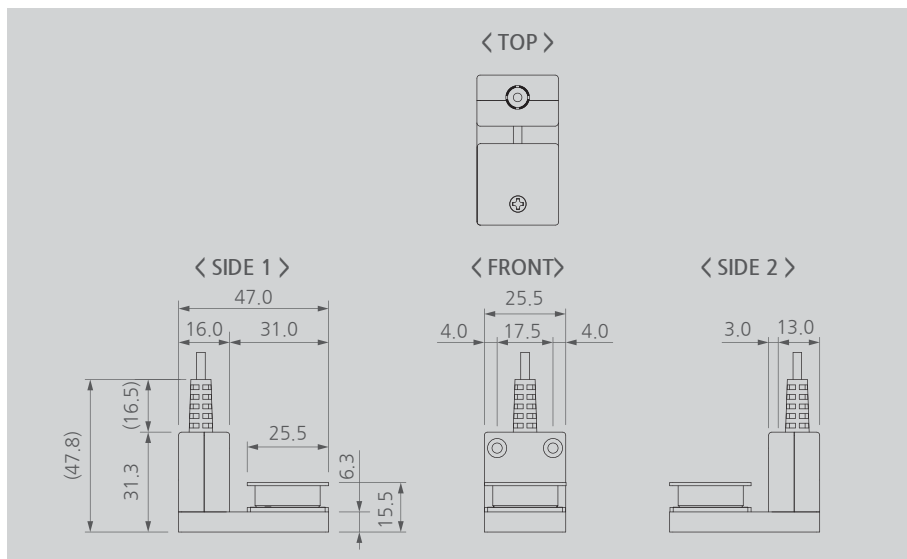
► Plate(150*150mm) _Option



► Plate(25*25mm_Elbow) _Option



► Plate(25*25mm_Reverse Elbow) _Option



10 Specifications

Item	Target Module	Remarks
Input Power	DC 24V $\pm$ 5%	-
Current Consumption	Max 1.0 A	Based on 4 Channels
Power Consumption	24W	Based on 4 Channels
Supported Channels	Default 4 Channels	Supports expansion up to 8 Channels
Communication Method	RS-485	Modbus RTU
Measurement Range	0 ~ $\pm$ 1000V	Balance / Decay
Operating Temperature	0°C ~ 50°C	-
Operating Humidity	35% ~ 85% RH	No condensation

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