

For Installer Company Use
For Maintenance and Inspection Use

**TABUCHI
ELECTRIC**

Model

EPW-T250P6-US
Three-phase
Inverter Unit

Model

EOW-MBX03-US
Master Box for
Three-phase Inverter

Quick Reference for Installation

- The content in this Installation Manual is intended for certified installers.
- This document is extracted only the content necessary for the construction work from the Installation manual.
- This document is quick reference of installation. Please read "Important Safety Instructions" of Installation Manual Before the work.
- After installation/configuration, give this manual to the person responsible for maintenance and store it in a safe place.

- This product must be correctly installed in order for it to perform and function sufficiently, and to ensure safety.
- Be sure to read these instructions prior to installing the product. Be sure to read the section, "Safety".
- To ensure safety, have a qualified person perform installation wiring in accordance with laws and regulations.

* This Inverter can not operate without the Master Box (EOW-MBX03-US)

*This inverter can be installed outdoors or indoors.

*The mounting location should be free and safely accessible for servicing.

*Logo is displayed on the front enclosure.

※Attention

All electrical installations must be performed in accordance with the local electrical standards and the National Electrical Code® ANSI/NFPA 70 or the Canadian Electrical Code® CSA C22.1.

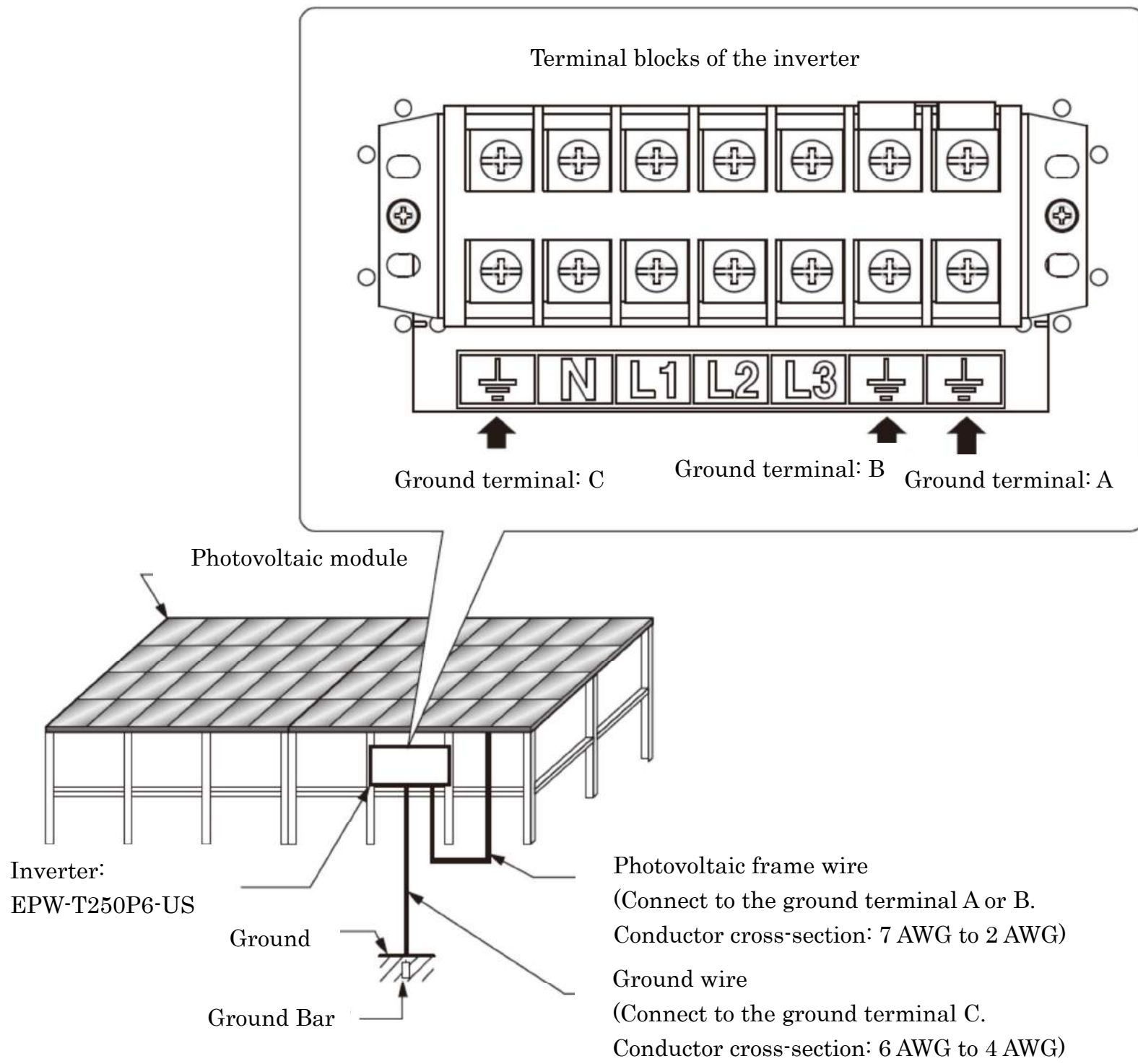
The electrical connection of the inverter must be performed by qualified persons only.

Ensure that no cables used for electrical connection are damaged.

Ensure that the front enclosure of the inverter is attached correctly.

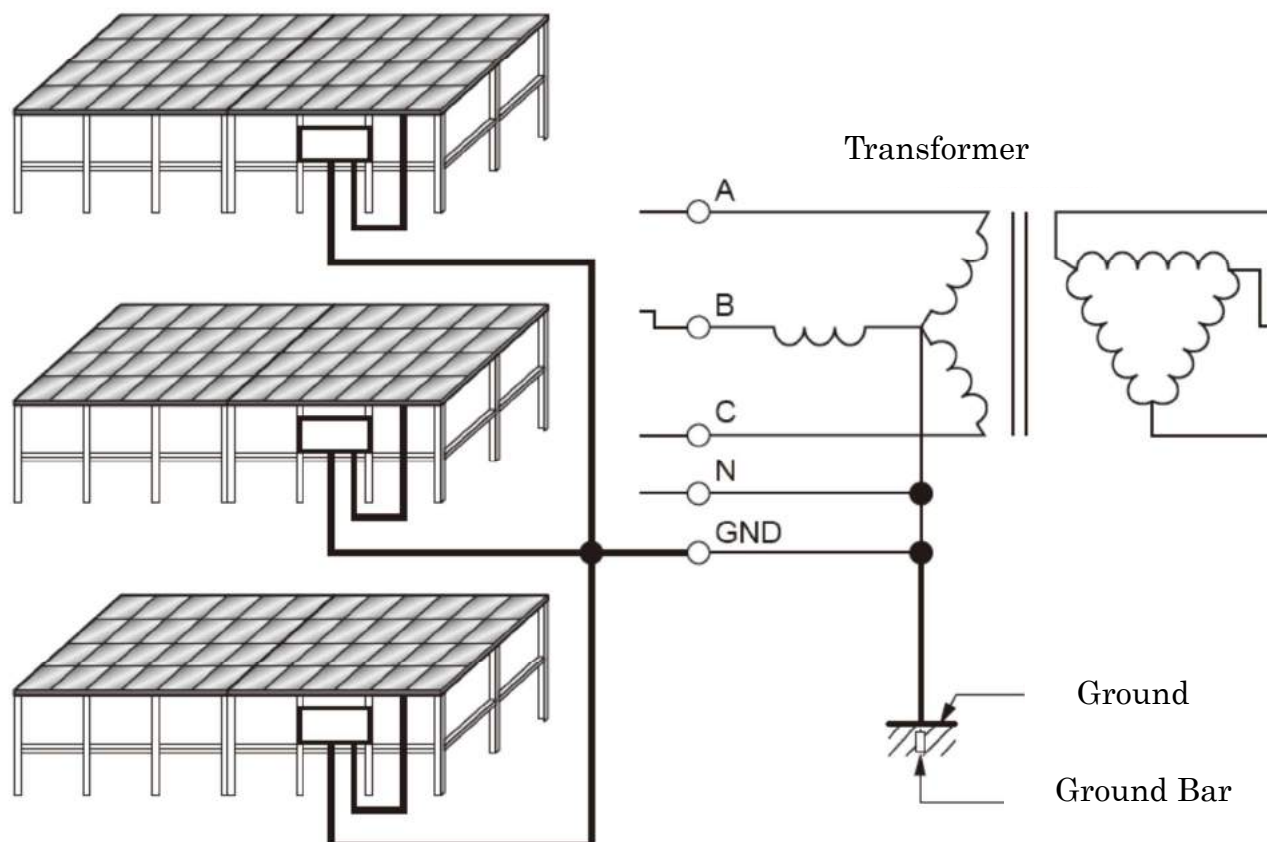
1. Important points for the ground work

1. Please connect the photovoltaic frame wire to the ground terminal A or B of the inverter.
And, connect the ground terminal C of the inverter to the ground.



Make sure to connect the photovoltaic frame ground to the ground terminal of the inverter.

2. If multiple inverters are installed, it is recommended that the ground wire between the transformer and each inverter should be as short as possible.



2. Mounting

Inverter

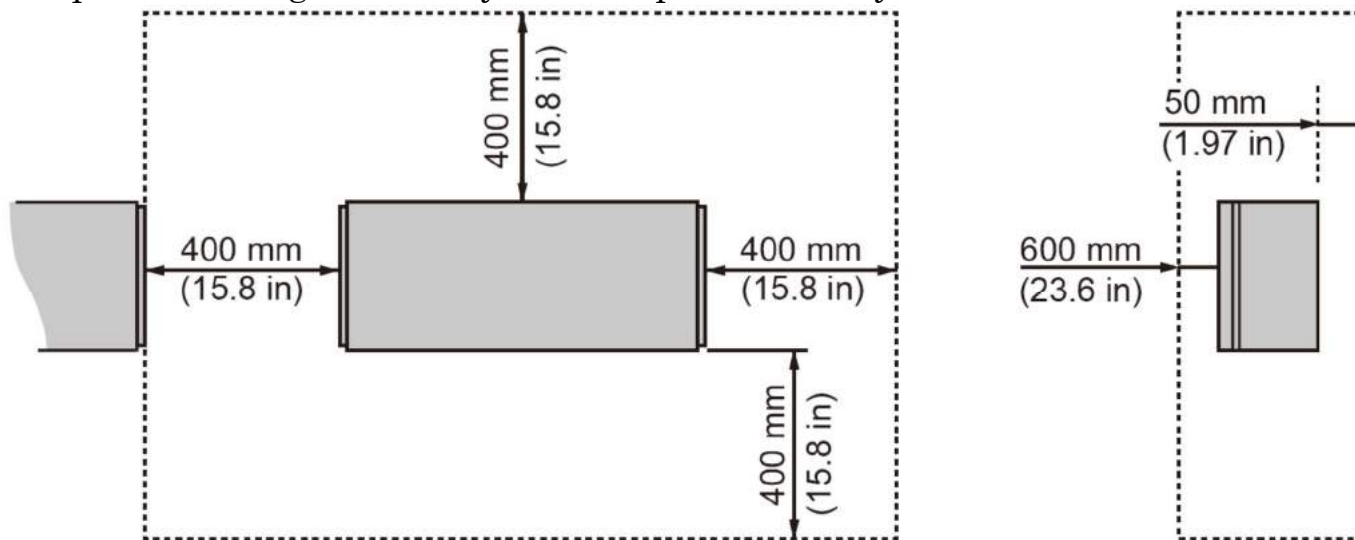
<Precautions>

- Confirm frames or walls for installation can support the weight of the Inverter.

Weight *
Approx. 90.5kg (199 lb.)

* Weight does not include mounting brackets or frames.

- Reinforce walls if necessary.
- Ensure the clearance as shown in the diagram below around the Inverter.
(In order to provide space for ventilation, operation, and inspection, and to prevent being covered by snow or penetrated by water.)

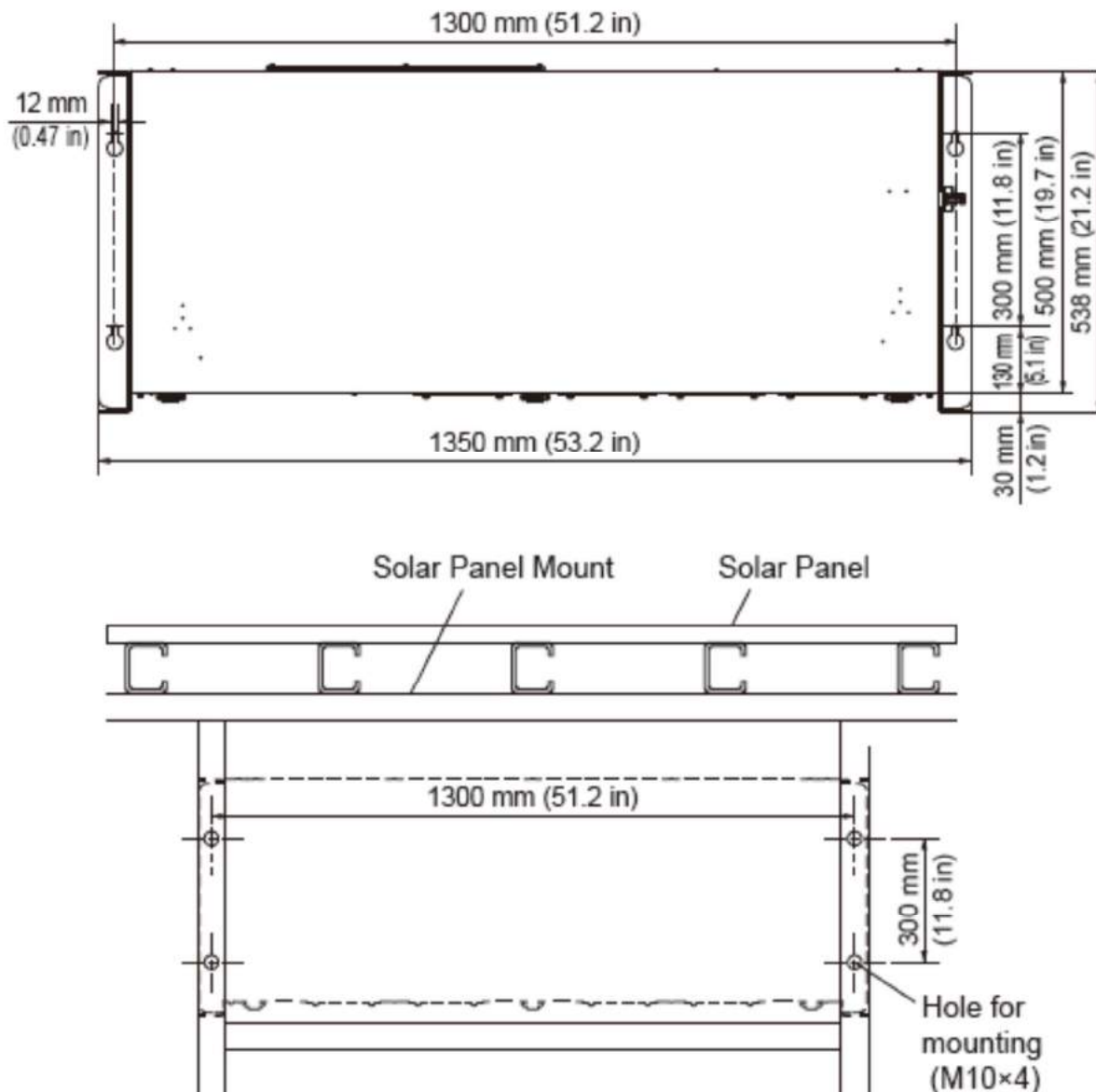


<Multiple units installation>

Refer to the above diagram when installing multiple Inverters.

<Installation hole positions>

Mount with M10 bolts in the following mounting pitch to a stand.



*Install vertically with a maximum incline of $\pm 5^\circ$.

Master Box

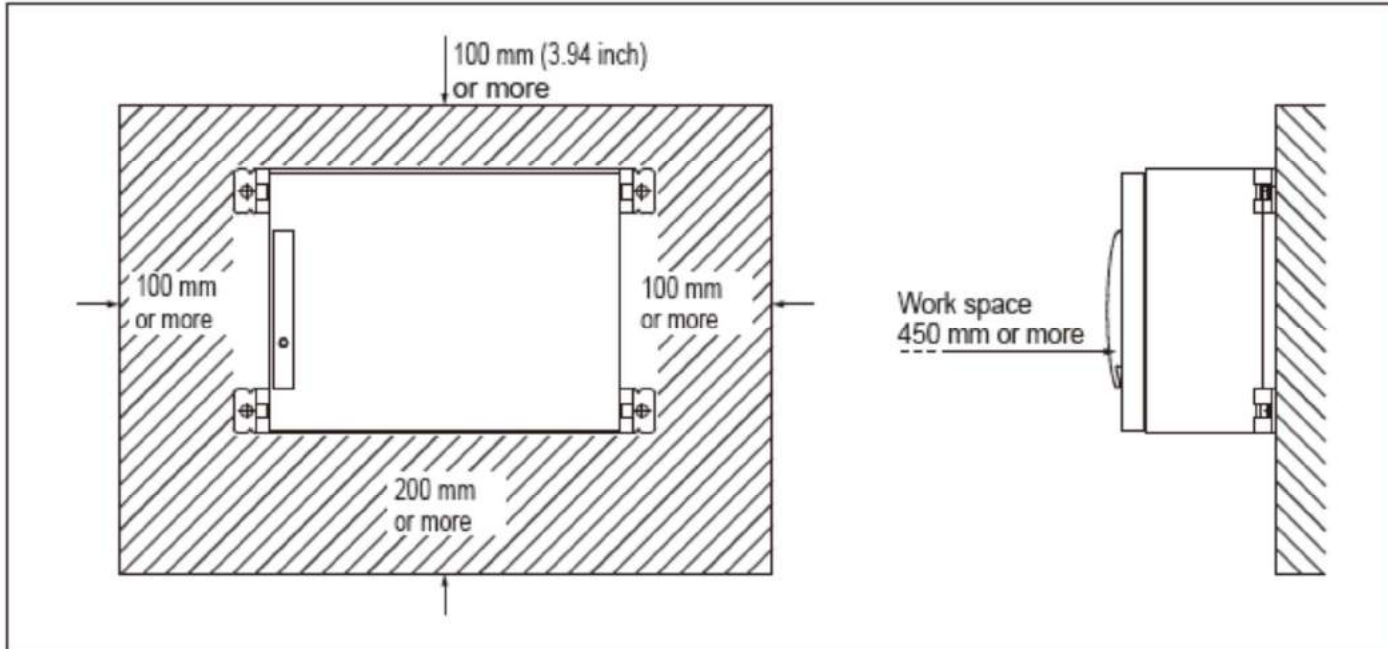
<Precautions>

- Confirm frames or walls for installation can support the weight of the Master Box.

Weight *
Approx. 12 kg (26 lb.)

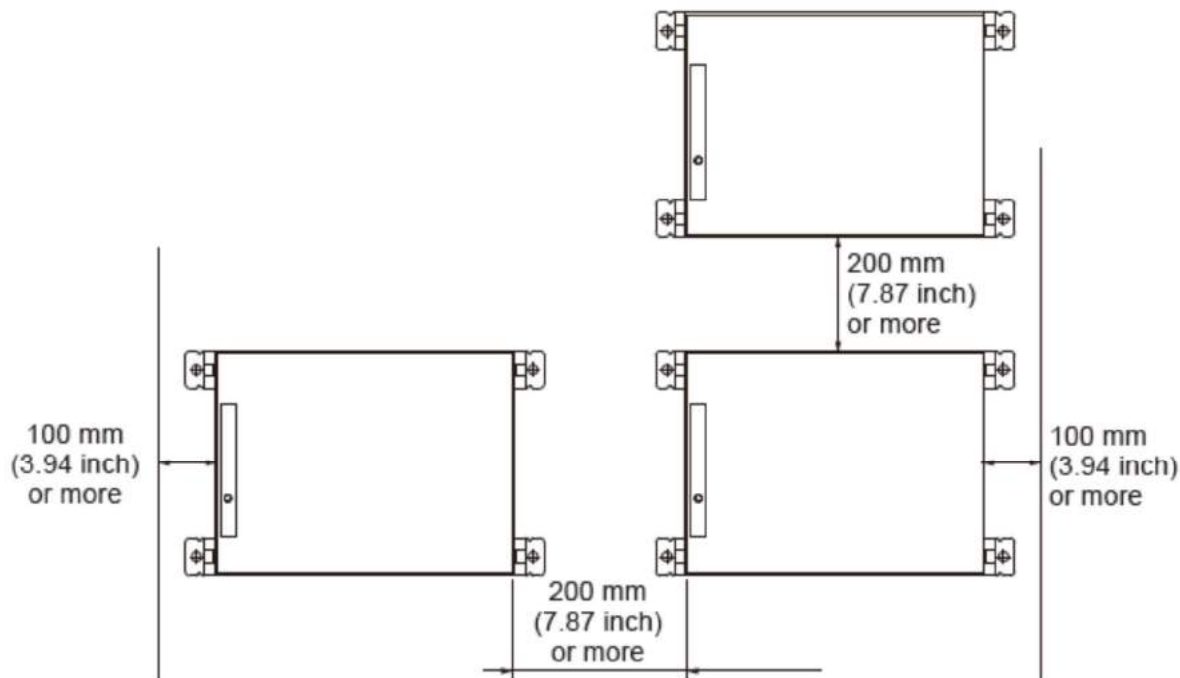
* Weight does not include mounting brackets or frames.

- Reinforce walls if necessary.
- Ensure the clearance as shown in the diagram below around the Master Box.
(In order to provide space for ventilation, operation, and inspection, and to prevent being covered by snow or penetrated by water.)



<Multiple units installation>

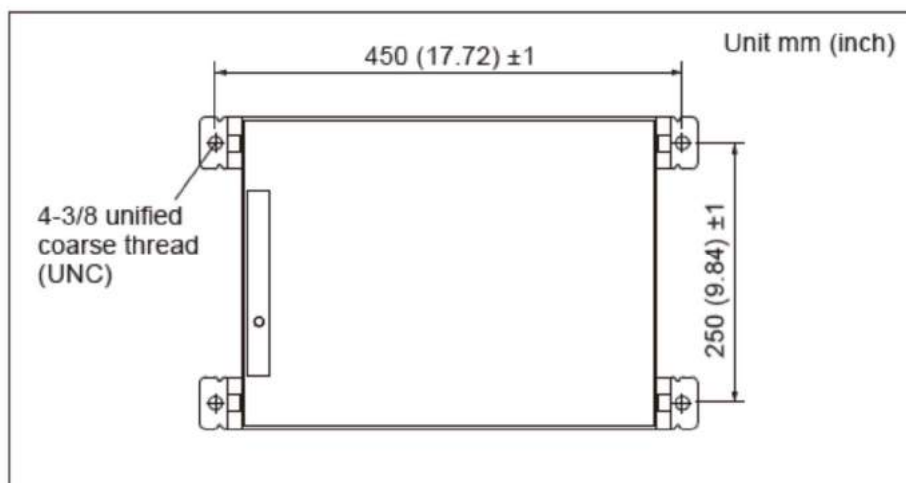
Refer to the following diagram when installing multiple Master Boxes;



<Installation hole positions>

Fixing bolt screw positions

[When the mounting bracket is installed on a lateral location]



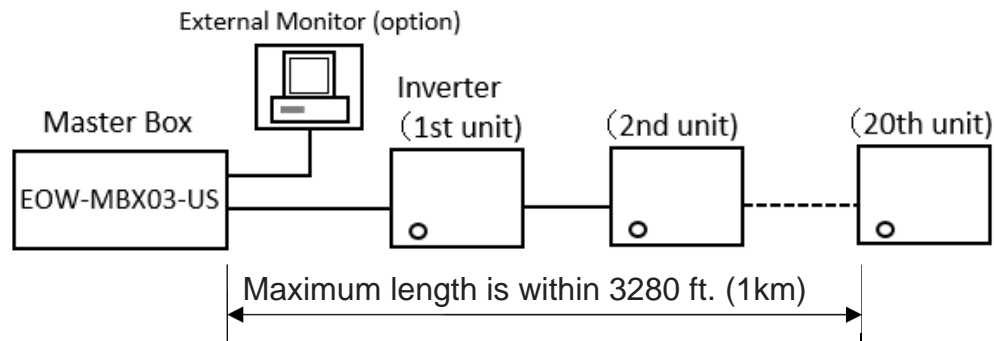
3. Communication Connection

Wire the Control Signal

(1) Example of Control with a single Master Box

- A single Master Box can control up to 20 inverters

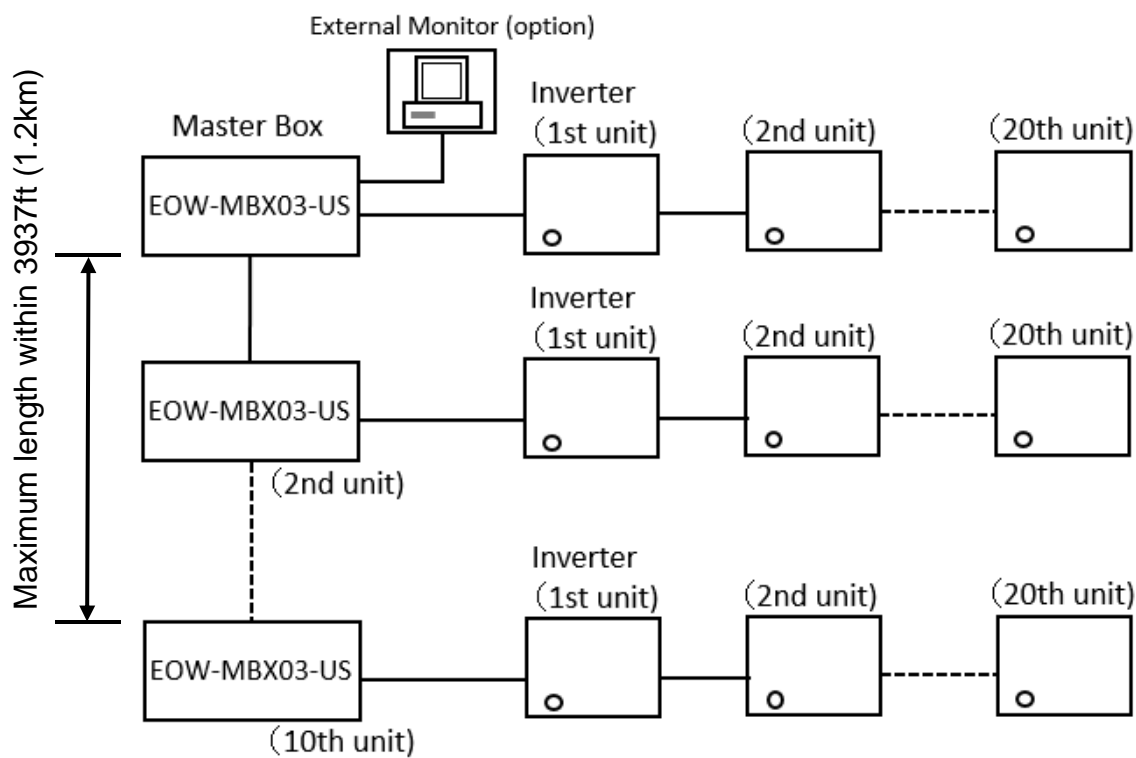
Connect individual inverter and Master Box together in a series by using the RS485 cable. The Master Box is capable of controlling 20 inverters.



(2) Connecting Two or More Master Boxes

- A maximum of 10 Master Boxes can be connected.

By connecting the external monitoring equipment and the Master Box with RS485 cables, it is possible to sequentially output the power information of the entire system.



Serial Communication (RS-485)

There are two RS-485 communication lines on the inverter.

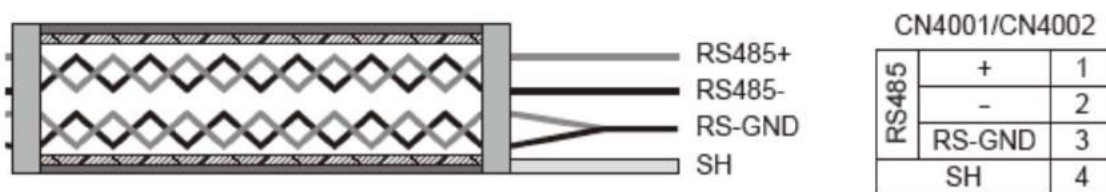
Connect either communication port by using the terminal block (CN4001/ CN4002).

Cable Requirements:

Use a cable designed for use with RS-485 communications, such as a Belden 3106A, which is a data cable wire with one twister pair for the +/- signals, one ground conductor, and a shield with drain wire (equivalent).

The table below shows connections for a dual twister pair shielded cable.

Connect either



Continuity of the shield in the RS-485 cable is important for low noise on the line. This is particularly true for large Plants with multiple inverters. For the best results, the shield must be tied to ground at only one point on the line, Typically at one end or the other.

The shield wiring must be continuous as it passes from one inverter to the next in a daisy chain, however it must not be tied to ground at these junctions.

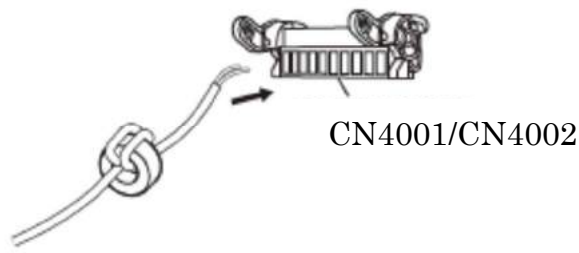
The SH terminal is provided as a floating tie point for this purpose. It allows shields (drain wires) from incoming And out-going daisy chain cables to be secured together but not grounded.

Inverter

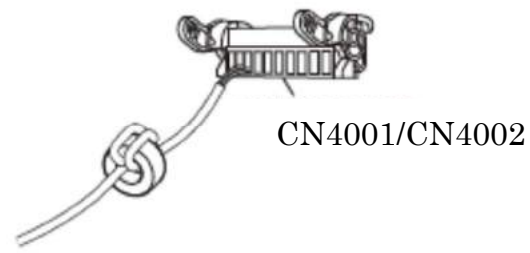
Add the core to RS-485 communication line:



Attach by turning ring core twice as shown.
Please use the supplied core



Add the ring core to each RS-485 communication line for the radiation noise.



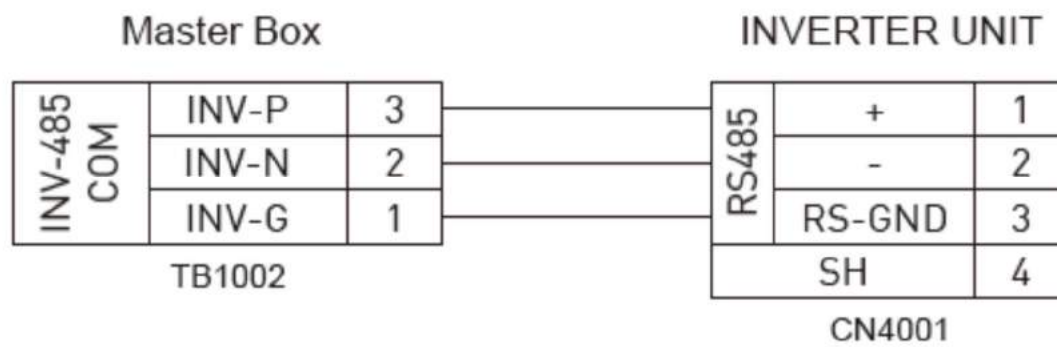
Connect the communication signal wires, to the plug for CN4001/CN4002, according to the following CN4001/CN4002 descriptions.
Use a flathead screwdriver to connect the wires.
(Screw thread of CN4001/CN4002: 3/32in)

Note:

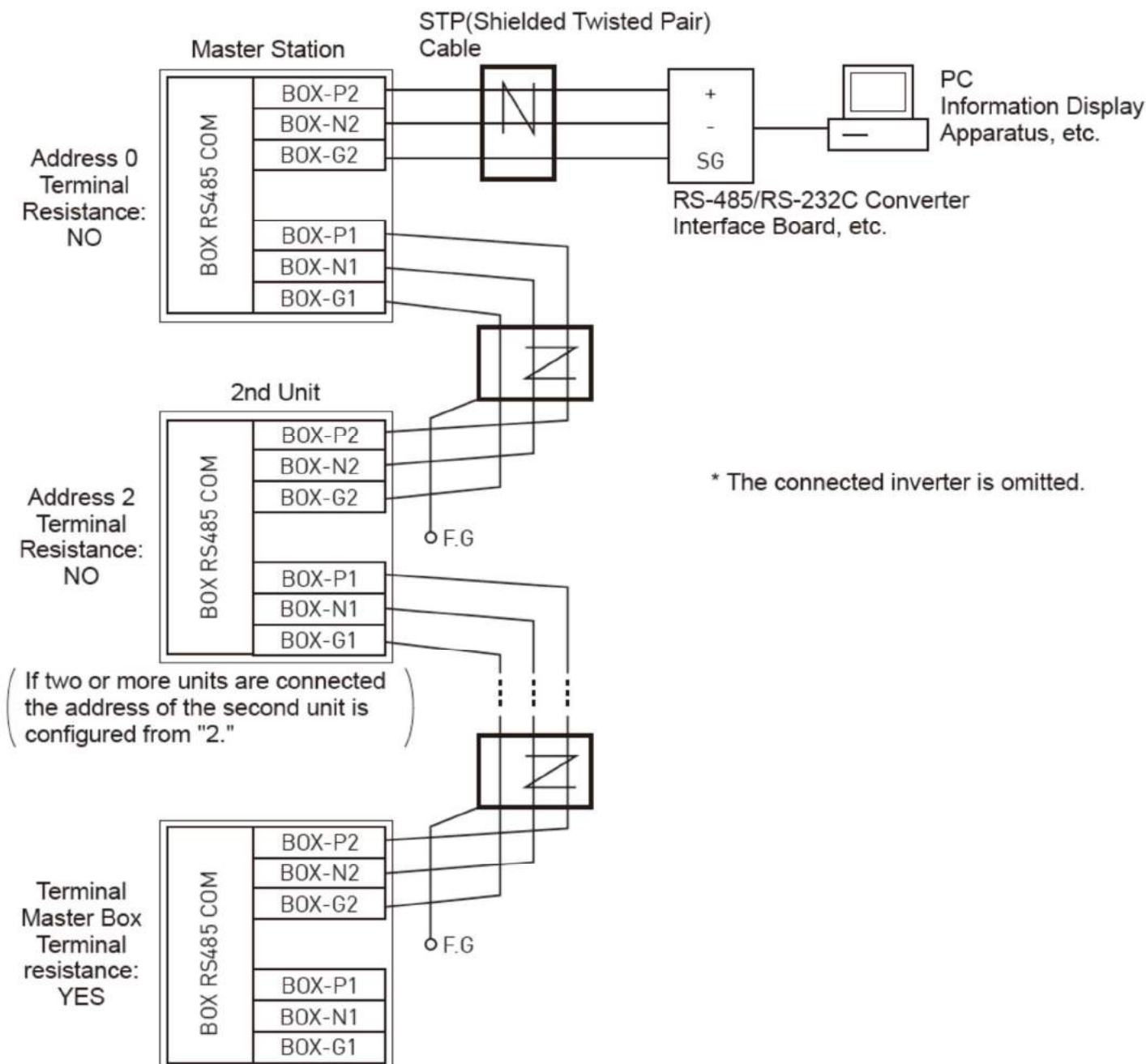
Peel back the sheath of cables connected to CN4001/CN4002 about 7 mm (0.28in).

Master Box

● Master Box to Inverter

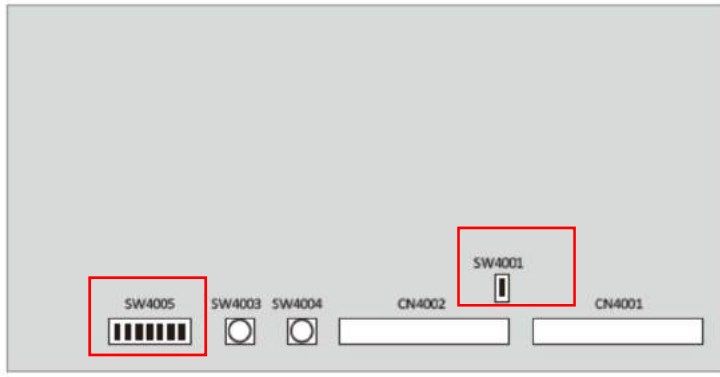


● Master Box to Master Box



4. DIP SW Setting

Inverter



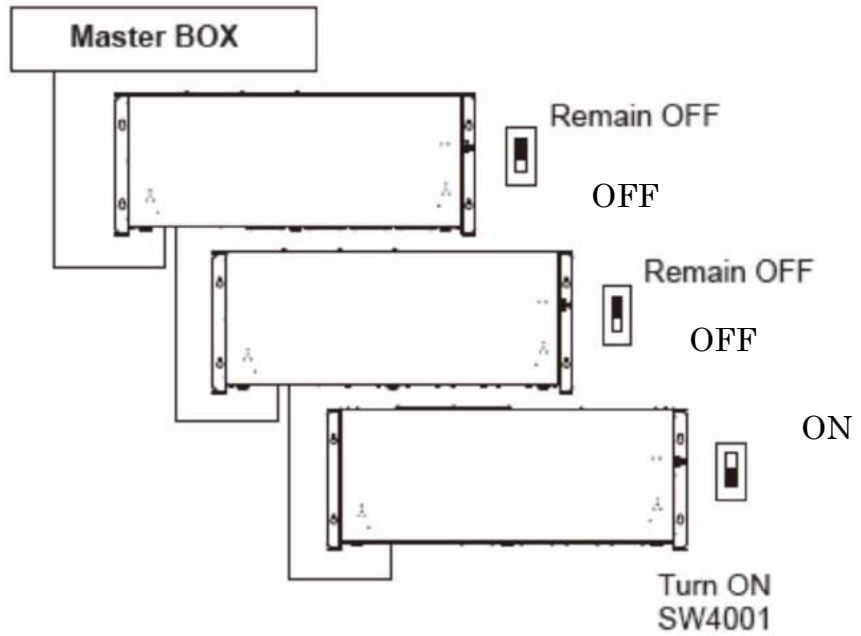
Note:

Terminal block CN4001 and CN4002 are internally paralleled to allow connection in daisy chain configuration.

Using the appropriate cable designed for use with RS-485 communications, connect all the RS-485 lines in series according to the daisy chain cabling method ENTER-EXIT.

For the last inverter in the daisy chain, or for a single inverter, activate the terminal resistance of the communication line by moving switch **SW4001** to the **ON** position.

For multiple inverters at one location it is possible to use one Master Box for up to 20 inverters.



Maximum cable length:

The maximum distance between the Master Box and the fastest inverter must be within 1.0 km (3280ft).

Dip SW "ON"



⇒ RS-485 Terminal Resistance setting

SW4001

Dip SW "OFF"

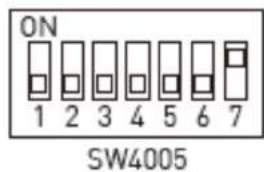


⇒ RS-485 relay setting (Default Setting)

SW4001

Address Setting for Communication

(Example)
Address 1

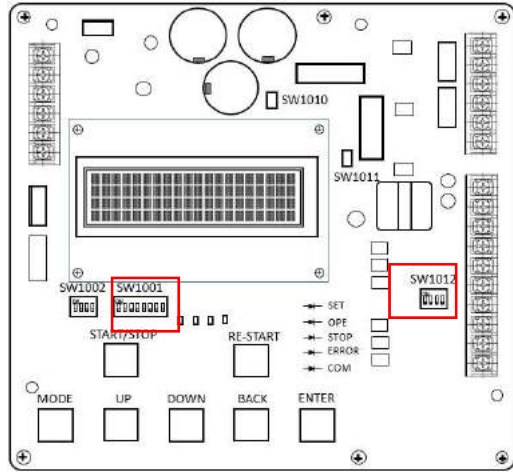


<Relationship between addresses and Dip SW>

Address	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7
1	OFF	OFF	OFF	OFF	ON ← (Default Setting)
2	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	ON	ON
4	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	ON	OFF	ON
6	OFF	OFF	ON	ON	OFF
7	OFF	OFF	ON	ON	ON
8	OFF	ON	OFF	OFF	OFF
9	OFF	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON	OFF
11	OFF	ON	OFF	ON	ON
12	OFF	ON	ON	OFF	OFF
13	OFF	ON	ON	OFF	ON
14	OFF	ON	ON	ON	OFF
15	OFF	ON	ON	ON	ON
16	ON	OFF	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON
18	ON	OFF	OFF	ON	OFF
19	ON	OFF	OFF	ON	ON
20	ON	OFF	ON	OFF	OFF

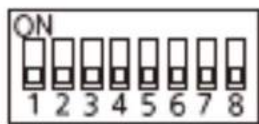
Set Pin#1 and Pin#2 OFF

Master Box



1. Configure using the Address Setting Switch (SW1001).

- (1) Set pins 1 through 8 on the Master Station to "OFF".
- (2) Set the address for the 2nd Master Box and any subsequent units to 2 through 10.
 - If two or more Master Boxes are connected, configure the address of the lead Master Box to "0".
 - Set the address of the 2nd Master Box and any subsequent units from "2".
 - Refer to <Relationship between Addresses and Dip SW> for pin settings.



= Master Station
Address set to "0"

SW1001

<Relationship between Address and Dip SW>

Address	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7	Pin #8
0	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	OFF	ON	ON
4	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	ON	OFF	ON
6	OFF	OFF	OFF	ON	ON	OFF
7	OFF	OFF	OFF	ON	ON	ON
8	OFF	OFF	ON	OFF	OFF	OFF
9	OFF	OFF	ON	OFF	OFF	ON
10	OFF	OFF	ON	OFF	ON	OFF

2. Use the Communication Terminal Setting Switch (SW1012) to configure the RS485

Terminal Resistance Setting between Master Boxes.

- (1) Set the pins of the Master Boxes between the Master Station and Terminal Master Box to "OFF".
- (2) On the Terminal Master Box, set pins to "ON".

