emeno® AM100 System Installation and Connection Guide

Version: V1.1

1. Cautions

Please note the following cautions before installation:

Environmental Requirements:

1) Ensure that there are no large metal objects around the antenna 2 meters away. This is to avoid large changes in antenna parameters, which could affect the normal operation of the system.

2) Do not store the same frequency (58KHz) label within 1.5 meters around the antenna. Large Tags should be 2 meters away from the antenna.

3) Ensure that there are no high-powered working equipment within a short distance of the antenna. Such equipment can generate noise and can affect the normal performance of the antenna;

Warning! Do not install or use this equipment near storage of flammable or explosive products.

Power Requirements:

1) The system needs a good independent power supply. The 220VAC used by all devices must be the same power supply, and the position of the live line and the neutral line are the same (the right side of the zero line to the right of the line), and a safety ground is also required. Fire line should choose one line without power equipment as the fire line of the antenna system.

2) Required dedicated power source, rather than use the power by the generator or provided by UPS power.

2. Packing List and Common Auxiliary Tools

Packing List:

	List Name	Photo	Description	Quantity
1	EAS Anti-theft System		EAS AM Antenna with AM100/AM200 mainboards	1pcs or 2 pcs per carton
2	Connection Cable between master and slave board		3 meter long cable (9*0.5 cable) with 9 pin socket	1set
3	AC1100 Power Supply with 5Pin Cable		7meter long cable (5*0.75 cable) with 5 pin socket	1pcs
4	Debugging Cable		USB Blue Cable	1pcs in every order, every 5sets with 1 pcs

Auxiliary Tools:


Electric Drill


Expansion Screw (M10*80mm)


Wrench


Electric Screwdriver


Manual Screwdriver


Hammer


Angle Grinder

3. Installation Precautions

1) Our acoustic magnetic equipment is recommended to be installed at a distance of 1.5-1.8 meters for soft labels and 1.8-2.4 meters for hard tags. Before fixing antenna frame, please adjust the optimal installation distance according to the environmental test and the signal strength of the security tags.

2) Detect the sensitivity of the system with same frequency (58KHz) tag. Detect independent alarms of the master and slave antennas. The system works normally, there is no hardware problem, and there is no strong interference around the installation site, then the antenna can be fixed.

3) Fix the antennas in the same direction (ie, the slave board to the same side of antenna) to the ground and keep them in line with the water level for best results.

4) Cut the groove on the ground and place the connection cable into the groove. After the power line and the connection line are well confirmed, the concrete can be backfilled.

5) When plugging the connection cables from the boards, you need to power off the system first. Please do not plug or unplug the connection cable from the board with power on or without power off, to avoid damage to the device.

Simple Troubleshooting:

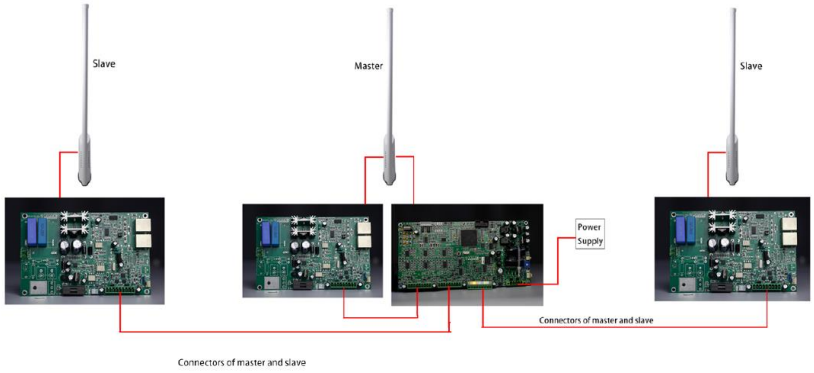
1) Check that the connection socket of power cable, connection cable is not loose, and make sure it is connected correctly and securely.

2) Check that the neutral line and the live line of the power supply not be mixed.

3) Check if the fuse is burnt out and replace the power supply if it is damaged

4) Check that the antenna is placed in a dry, well-ventilated area to avoid board hardware failure due to moisture or water ingress.

4. Connections and Installation



1) 9PIN cable connects main board and slave board, take the color as reference.

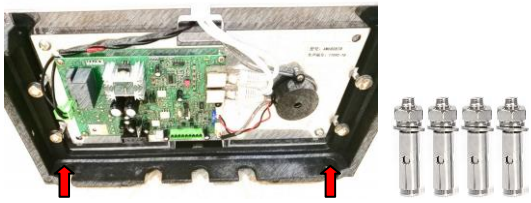
2) 5PIN cable connects to power socket of master board.

3) After connecting the cables, power on the system. The system alarms and starts.

Can be fix installation under normal work

1) Open the base cover use Electric or manual screwdriver

2) Antenna base mounting hole (base size): As shown in the picture below, the hole at the four corners of the base is the fixed mounting hole of the device.



3) Drill in the ground use Electric drill

4) Use the expansion screws to fix the antenna base mounting hole , the specifications of screws are M10*80mm:

5) Use the tools Wrench to screw and hammer to fix the screws.

6) Cutting the slot in the ground with an Angel Grinder , put the connection cable underground, use an stainless steel pipe to cover the cable.

7) Test he detection and finish the installation.

5. LED Indicators

1) Under normal work: a. b. c.

a. The first one on the left side of the upper row is the work indicator, which flashes slowly during normal operation;
b. The two lights on the right side of the upper row are channel indicators. The right light is on for channel 1, the left light is on for channel 2, and both the two lights are on for channel 3. In normal operation, the system alternately displays the signal interference strength of the three channels.
c. The channel noise and environment signal is shown from the down row (the right to the left indicates the stronger of the interference signal). 1-2.5 lights on means the interference is okay; 3 lights on means quite much interference, shorter the installation distance and adjust the system sensitivity is considered in this situation.

2) Under abnormal operation: a. b.

a. The second one on the left side of the upper row is the fault indicator light (red light). When this light is on, it indicates that there is a fault in the operation of the board (Factory reset can be done to solve, see factory reset function).
b. The four indicators in the lower row are all on, means too much interference or the channel signal is too weak (the lights flashes more than 3), and the system not working. On-site environment checking and tuning is necessary in this situation (see software debugging) and then fixed installation.

In the worse environment where the interference is very strong, the device cannot be installed. We can provide a special customized motherboard to complete this project!

6. Common Malfunction Analysis

No.	Conclusion	Fault Phenomenon	Analysis and Solution
1	Hardware Malfunction	System not start	Check whether the fuse is burn and the power voltage is 110v or 220v, change the power supply unit
2	Hardware Malfunction	No transmitter signal	Listen carefully to check whether the transmitting antenna has a soft vibration when transmitting, or use an inductive electric pen to test whether there is an electromagnetic field around the antenna. If not, it may be a malfunction of the transmitting motherboard. Change the master board.
3	Hardware Malfunction	No alarm: no alarm even if the label is placed very close (label should be good and tested on other system)	See if the indicator light is under normal work or not, check if the connection cables include 9pin cable, 5pin cable, and network cable are firmly connected. Fix each connection socket.
4	Hardware Malfunction	Red light Indicator	Factory Reset
5	Power Problem	The noise value is too high, the sensitivity is low, and there are occasional false alarms.	Check if the power supply connect the ground wire
6	Power Problem	Two channels use the same power supply, one channel High sensitivity, but low sensitivity in other channel	Check if the position of the neutral line and the fire line are opposite. Change the power connection, or set in our software @ Slope: Rising to Falling in parameter settings
7	No Detect Tags	Observe the indicator light on master board, the lower row of indicators is fully illuminated	Check if there are tags nearby, move the soft label 1.5 meter away, move the large tags 2.0 meter away
8	False Alarm	There are large metal objects around the antenna (such as metal shopping carts, lockers, umbrella racks, etc.). Metal objects close to the antenna cause distortion of the detection signal, increase the noise value, reduce the detection distance, and cause interference to the antenna.	Remove large metal objects until false positives are eliminated
9	False Alarm	There are a lot of spotlights and fluorescent lamps near the antenna. and false alarm when turned on	The starter of spotlights and fluorescent lamps is close to 58KHZ, which interferes with the antenna. Replace the starter for spotlights and fluorescent lamps
10	False Alarm	There are asynchronous magnetic and magnetic devices around the antenna. When it is out of sync with other aeromagnetic devices, system false alarms are easy to occur.	Increase sensitivity and synchronize by software debugging
11	False Alarm	Soft labels or hard labels are too close to the antenna. When the label on the checkout counter or clothing store closet is too close to the antenna, a system false alarm will occur.	The additive effect of the tag signal, moving the tag to a greater distance