



**Installation Guide  
System Operating Instructions (Single Lane System)**

**WENTWORTH  
TECHNOLOGY**

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# Getting Started

## **Locate the battery charger and batteries.**

*Immediately begin charging the batteries, as you will need to use a headset to test and confirm the location of the base station.*

## **When unpacking the system for installation, insure the following:**

- Inspect the system for damage—Report to Wentworth immediately.
- Insure that all parts are present—Report missing parts immediately.
- Record the serial numbers IF the system is supplied from any other source than directly from Wentworth Technology. Send the #'s to Wentworth Technology.
- Insure that a vehicle detection system (loop and electronics) is installed or supplied if needed.
- Confirm that the conduit does not carry AC voltage lines.

## **Site Survey:**

- Speak with the manager/owner/job superintendent to coordinate the installation.
- Discuss the proposed Base Station location. See below for detail on selecting a proper location.

## **STEP 1**

### **Location of the Base Station:**

- The Base Station must be in a location easily accessed by restaurant personnel (eye level, within arm's reach).
- Avoid metal walls and equipment that will block the radio signal or areas where liquids could splash on base.
- Locate an available duplex outlet (within 6')

**USE the Base to test the Chosen Location.  
Connect the Base Station Power Supply:**

- Plug the power supply barrel plug into the base station connector located on the upper right side.
- **Precision Tip:** Loop the removable AC power cord back across the body of the power supply and secure it with a zip-tie or black tape to prevent accidental disconnections.
- **CAUTION! Do not plug in the charger power supply. The base power supply is 18V.**



**Headset Battery Installation:** The battery compartment is located on



the opposite side of the headset from the microphone boom. To open the battery compartment, push up on the battery door latch while pulling out the bottom of the door. Insert the battery with the label facing out. Replace the door by inserting the top of the door in its slot followed by pushing the bottom of the door into place until it locks.

**Power On Headset:** Press the ORANGE button on the opposite side of the headset from the battery door. The green LED will light if the battery is properly inserted and the door is closed.

**Test the proposed location for the base station:**

- To unlock Base Station with PIN (if necessary):
- Press PIN button on the Home Screen (top center of touch screen) to access the “enter pin” screen Enter Tech Pin “0000” using the key pad
- If correct, the Home Screen will appear with the “Unlock” graphic displayed.

- **Register the headsets (Note Headsets are usually pre-registered to the base prior to the system shipping):**
- Press the “Register” button on the Base Station Touch Screen (TOP LEFT) to access the “registration screen”.
- Press the “Register Headset” bar on the Registration screen.
- Power the headset “ON” while remaining close to the base station. (One headset at a time).
- Registration will occur within 3 minutes.
- **Precision Tip:** Wearing a registered headset, physically go to areas where the headsets will be used and confirm that good communications are available. Static will indicate a low signal. “out of range” will be heard for loss of signal. Remember to test outside in the DT lane where Speed Team usage will occur.
- After testing, unplug the Base Station for the balance of the wiring connections.

## STEP 2

### Mount the base station:



*Photo: Correct routing of cables to avoid radio interference with base antennae.*

- Use a drill to oval out one hole in the hinge for easy leveling of the base.
- Depending on the surface type, select an appropriate mounting fastener (zinc wall anchors supplied) insuring that the mounting is firm and secure.
- Insert two screws into the Base Station hinge and spacer plate and attach to the wall. Spacer plate is 1”x3” with two holes to match hinge.
- When drilling into tile, refer to the Wentworth Technology support website for tips.

## STEP 3



### **Battery Charger Mounting:**

It is recommended that the battery charger be wall mounted to prevent liquids, crumbs or other debris from entering the battery slots. The charger must be mounted vertically with the lights on the right side so that the battery slot latches are at the bottom of the slot to retain the battery. Use the supplied metal bracket to secure the charger to the wall. Pull “feet” off the bottom of the charger if wall mounting. Use alcohol wipe to clean the mounting surface

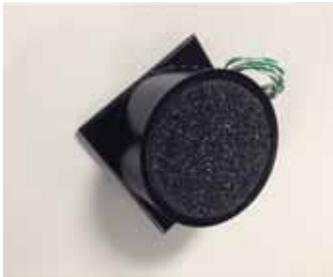
## STEP 4

### **Cable pulling:**

All audio cables are provided and are twisted-pair, shielded cables, 200’ in length.

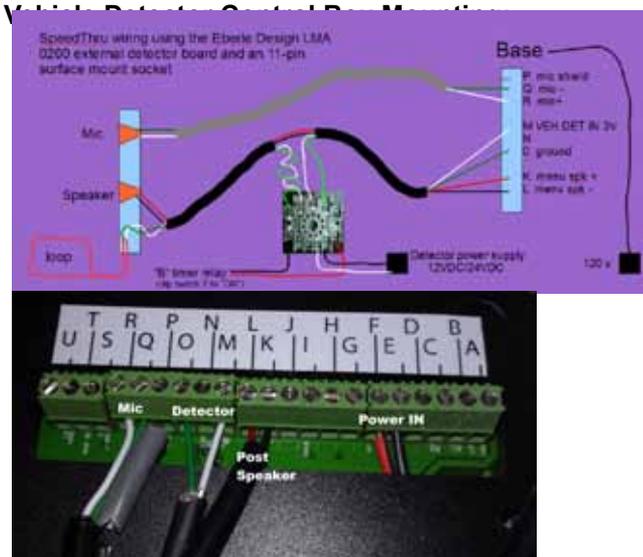
- It is important that separate cables are used for the speaker and microphone located at the order point.
- It is important that no high-voltage wiring is run with the audio cables in same conduit. The conduit containing the audio cables MUST be at least 12” away from any power (AC mains) conduit if the conduits are parallel.
- Run all audio cables at least 18” away from any fluorescent lighting or power cables associated with fluorescent lighting.
- This would negatively affect audio quality as well as violate the Electrical Code.
- Two wire spools are provided.
- Black Jacket, use the Red/Black internal wires for speaker connection. The extra green and white wires in the black jacket cable are available for a detector connection if required.
- Gray Jacket, use the Green/White/Shield internal wires for microphone. No other connections can be made in this cable.
- After pulling the cables, allow enough length on each end to reach the intended areas plus a little extra wire to make connection easy, but leaving no coils when completed.

## STEP 5



### Microphone and Speaker Installation:

- The microphone should be mounted at a level where the customer will be speaking directly to it. (36"-40")
- The speaker should be mounted below the microphone by 20" to 24" to avoid feedback and be acoustically isolated from the microphone. If possible face speaker 90 degrees away from car to reduce echo.
- **Precision Tip:** CAUTION: USE ONLY LIGHT PRESSURE TO HOLD THE MICROPHONE OR SPEAKER IN PLACE. Over packing the foam will reduce it's noise canceling properties and will transmit vibration. Loose, rough cut foam is preferred! It is not necessary to fill the area around the speaker or microphone. However, if there is a compartment between the microphone and speaker, it is good to fill that area with any unused foam to reduce resonance in the speaker post.
- **Precision Tip:** Solder all wire connections. Leave wire connections pointed up so that water cannot follow the wire into the connection. Insure that wires do not lead water into the speaker box or microphone, i. e. the wire should come out of the bottom of the housing. Solder the microphone leads to the gray jacket cable, (white and green).
- **Precision Tip:** Do not ground the microphone shield to the post! Leave shield un-attached! Shield will only be connected at the base station/terminal block.

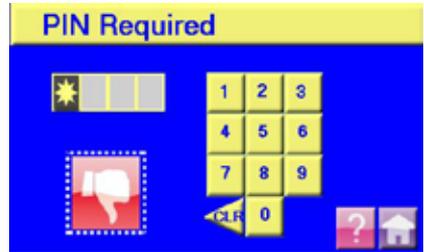


*Standard speaker, microphone and detector connections illustration*

**Wiring Legend:**

- A Greet Time Relay Out NO
- B No Connect
- C Alert Input NO
- D GND
- E GND
- F DC Power In
- G Grill Speaker +
- H Grill Speaker -
- I Mic Bias
- J GND
- K Menu Speaker +
- L Menu Speaker -
- M VEH DET in LV
- N VEH DET in HV
- O GND
- P Mic Shield
- Q Mic -
- R Mic +
- S Greet Time Audio Out -
- T GND
- U No Connect

## STEP 6



### Base Station Setup:

Enter Tech Pin “0000” on the keypad (auto-returned to the “Home” screen, which now displays a green “Unlocked” PIN button). An incorrect entry displays “Thumbs Down”. Try again!

### Headset Registration Instructions:

Press the “Register Headset” button (top left button) opening the screen shown to the right.



### Registration Screen Information:

- Gray bar with no number = slot available for registration
- Gray bar with “off” serial number = registered headset powered off
- Green bar with “on” serial number = registered headset powered on
- Serial number followed by “LO” = headset in “Listen Only” Mode

### To Register Headsets:

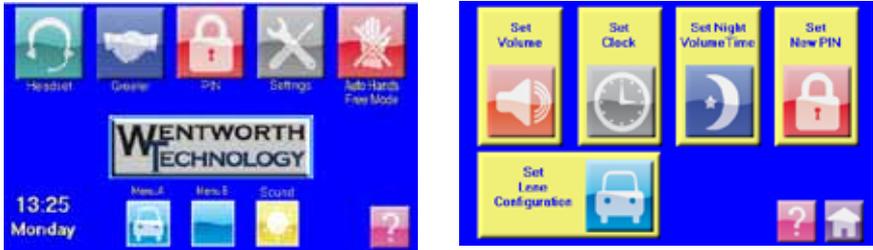
Press “Register Headset”(top left bar) then power on the headsets. Allow a couple minutes. If registration is not successful, power off the headset

and repeat the process. (one headset at a time is preferred).

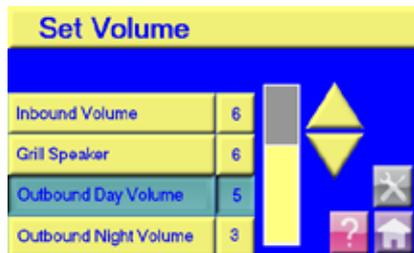
**To Put a Headset in Listen Only Mode:**

Identify serial number on headset (see the sticker on battery side of headset) Press the Serial Number Bar (it turns red) then press “Listen Only” (yellow bar) “LO” appears after serial number.

Repeat process to remove headset from “Listen Only Mode”



Press the “Home” button (bottom right) to return to the Home screen.



**Volume Set Up Instructions:**

Press “Settings” (Fourth button on top row. )      Press “Set Volume”

**Select the volume to be adjusted:**

- Inbound = sound from the order point microphone which is heard in the headset
- Grill Speaker = the volume of the optional kitchen or office ceiling speakers
- Outbound Day Volume = the sound the customer hears when in Day Mode
- Outbound Night Volume = the sound the customer hears when in Night Mode

## Tips on setting the sound:

For the best results, keep both inbound and outbound volumes as low as possible. Setting the Inbound volume too high will unnecessarily increase background noise.

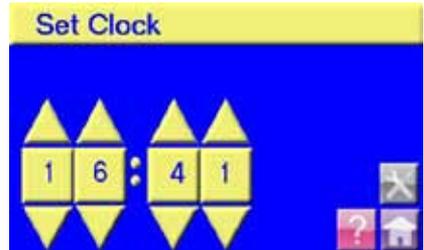
Setting the Outbound volume too high may produce echo. (If the Night Volume mode is NOT used, set that volume to match the DAY Volume. This provides protection from someone activating the Night Volume Mode accidentally).

## Grill Speaker Option:

INSTALLER ONLY: The Grill speaker must be balanced by adjusting the potentiometer on the circuit board inside the Base Station housing. Opening the left side cover will reveal two blue knobs. The upper blue knob is the Grill Speaker Balance adjustment. The knob can be rotated  $\frac{3}{4}$  of a full turn, stop to stop. Test the setting until an acceptable balance is achieved between the volume of the customers voice (clockwise) and the volume of the order takers voice (counterclockwise).

Press “Tools” (lower right, above “Home”) to return to the previous screen.

## Set Clock Instructions (optional- for greeter or night volume only):



Press “**Set Clock**” opening screen to the right.

Adjust the time (24 hour format) using the arrows above or below the numbers.

Press “**Tools**” to return to the previous screen. Press “**Set Night Volume Time**”.



Press “Set Night Volume Time” opening the screen to the right.

### **Night Volume Time Instructions:**

If Night Volume Mode is *NOT* used. Set all times to 00:00.

If Night Volume Mode *WILL* be used:

Touch “Begin Time” then set the time desired for a sound reduction to occur.

Touch “End Time” and set the time for the standard Day Volume to return.

Night Volume Mode provides an automatic daily change of volume to accommodate locations where residential areas are close to the restaurant. Be sure to properly set the desired Night Volume level on the “Set Volume” screen. Press “Tools” to return to the previous screen.

### **Additional Installations:**

Kitchen speakers (grill speakers) are an optional item. If ordered, install as directed by the manager/GC or owner in the kitchen drop ceiling.

It is important that the kitchen speakers be located as far away from the areas frequented by headsets to reduce feedback.

### **General Tips:**

- Always pull new wire unless the owner gives Wentworth Technology the authorization to use old wire and indicates, in writing, that they understand it voids certain parts of the warranty.
- The speaker and Mic should be 24” apart and the speaker preferably is facing down.
- Do not use the extra 2 wires in the grey mic cable.
- Do not put any additional wires in the conduit used for the mic and speaker.
- The best sensitivity for the detector is between 4 and 6.

## **Parts List:**

### **Base station:**

- Three (3) screws #6
- Three (3) wall anchors (EZ Ancor metal)
- Template for marking base station screw locations
- Cord restraint for power cord and wires (Velcro and zip ties)
- Attached hinge and loose magnetic catch
- Gray wire nuts for detector connection

### **Wire:**

- Two (2) 200' spools of 22 AWG Shielded, one black jacket, one gray jacket

### **Speaker/Microphone:**

- Enclosure for speaker
- Microphone Enclosure Foam
- 6 silicone filled wire nuts
- 8" x 8" x 3/8 wind screen (2 included) plus white water proof fabric (2)
- Acoustic foam for speaker post

### **Vehicle Detector (if included):**

- Screws (2)
- Anchors (2)

### **Battery Charger:**

- Mounting bracket

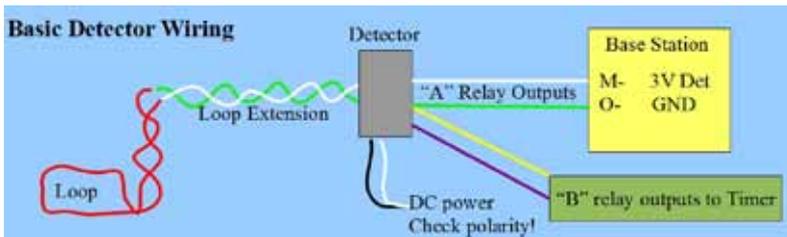
### **Headsets:**

- Hooks for storage- 1 per headset
- Screws/anchors- 2 per hook

## Basic Detector Wiring

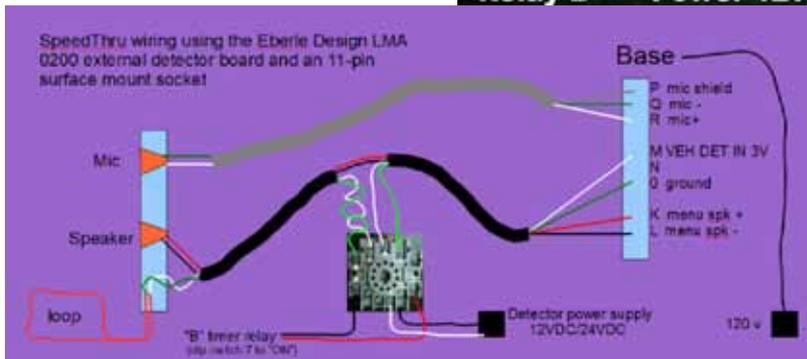
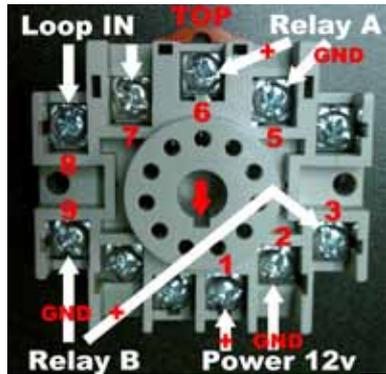
Important points:

- Soldering of loop connections is CRITICAL. Corrosion will result in missed detections.
- Vibration or movement between the loop wires and loop extension can result in false detections which is why loop wires are twisted. Further secure all loose loop wires and extension with electrical tape to insure they do not move in relationship to each other.
- Insure the Veh Det in LV and Ground connections are identified and properly connected at the Base Station. Failure to do so could possible cause difficulty if a timer is ever added to the system.



# Wiring EDI LMA 1250 Detector w/11 pin Block

LMA-0200-LV Rev D	
12VDC, 24VDC & 24VAC - FAIL SAFE	
PIN CONNECTIONS	
1	+12VDC / +24VDC / 24VAC (+)
2	DC GROUND / 24VAC (-)
3	OUTPUT B RELAY- N.O. CLOSSES FOR DETECT
4	NO CONNECTION
5	OUTPUT A RELAY- COM
6	OUTPUT A RELAY- N.O. CLOSSES FOR DETECT
7	LOOP INPUT
8	LOOP INPUT
9	OUTPUT B RELAY- COM
10	OUTPUT A RELAY- N.C.
11	OUTPUT B RELAY- N.C.
EBERLE DESIGN INC. (480) 968-6407	
3819 E. La Salle St. Phoenix, AZ. 85040	



Base Connection "M" VEH DET in LV must be to the 6-Output A Relay- N.O. from the detector board.

Base Connection "P" Mic Shield is the raw shield in the gray jacket cable. Shield must not be connected at the speaker post or it will induce hum.

No other connections are sensitive to + or - polarity.

LOOP: It is important that the loop lead wires are twisted to prevent movement and connections are soldered. This includes all wire from the loop to the detector board orange/red wires. Movement can cause false detections. Tape wires together after soldering.

"B" relay (detector pins 3 N.O. & 9 COM) may be used for a stand alone timer.

NOTE: When the "B" relay is used Dip switch "6" must be switched to "ON".



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