

## INTRODUCTION

Designed to update older intercom systems, the DMC3-4 is a whole-house music and communication system that uses your existing intercom 3 or 4 conductor system wire. It is designed to provide years of enjoyment and service to the homeowner. M&S Systems brand audio products are backed with more than 50 years of experience in the design and manufacture of precision acoustical equipment for the home. To ensure that the homeowner receives the high-quality music and voice reproduction that the system is designed to deliver, it is important that each step of the installation be carefully completed by the installer. In the event you need troubleshooting assistance, please call our technical support staff at 1-800-421-1587.

# DMC3-4 MUSIC/COMMUNICATIONS SYSTEM INSTALLATION INSTRUCTIONS



## CAUTION !

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



## SHOCK HAZARD !

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

## IMPORTANT SAFETY INSTRUCTIONS

**Read Instructions** - All the safety and operating instructions should be read before installing or operating the DMC3-4.

**Retain Instructions** - The safety and operating instructions should be retained for future reference.

**Heed Warnings** - All warnings on the appliance and in the operating instructions should be adhered to.

**Follow Instructions** - All operating and use instructions should be followed.

**Water and Moisture** - The appliance should not be used near water - for example: near bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like. Doing so can create a fire or shock hazards and impair the warranty.

**Cleaning** - Use only a dry cloth.

**Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

**Ventilation** - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings: or, placed in a built in installation, such as a bookcase or cabinet that may impede the flow of air to the ventilation openings.

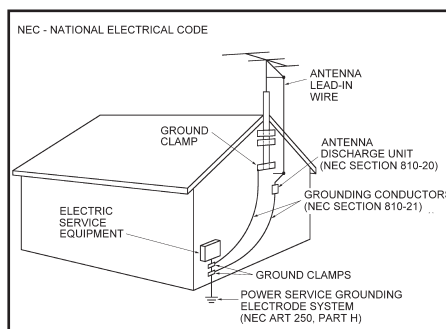
**Heat** - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

**Power Sources** - The appliance should be connected to a power supply only of the type described in the rough-in instructions or as marked on the appliance.

**Grounding or Polarization** - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

**Power Lines** - An outdoor antenna should be located away from power lines.

**Outdoor Antenna Grounding** - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode (see figure).



**Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

**Servicing** - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

**Damage Requiring Service** - The appliance should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or the appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.
- When the product exhibits a distinct change in performance - this indicates a need for service.

**Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

**Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

**Wall or Ceiling Mounting** - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

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## IMPORTANT DO'S & DON'TS

- ✓ **DO** ensure that all instructions have been followed before power is applied to system. The installation shall be carried out in accordance with all applicable installation rules.
- ✓ **DO** use only M&S systems brand cable (except for Cat-5 & RG-6) as called out in these instructions. The cable is designed and constructed with electrical specifications necessary for proper audio performance.
- ✓ **DO** use only a dry cloth to clean the exterior plastics on the DMC3-4 Master Station and Room Stations. **DO NOT** use liquid or aerosols.
- ✓ **DO** make gradual bends of the cable where necessary -- no sharper than 1" radius.
- ✓ **DO** dress the cables neatly with cable ties or Velcro™ wraps. Use loose or moderate pressure.
- ✓ **DO** use cable-pulling lubricant only for cable runs that may otherwise require great force to install. When cable lubricant is used, read the instructions to be sure it is compatible with the cable jacket material (PVC or FEP).
- ✓ **DO** avoid stressing cable conductors, limit pulling tension to 25 pounds or less as specified by EIA/TIA-568A standard. Pull cables gradually and with constant tension, taking care not to crush or pinch bundles.
- ✓ **DO** use grommets to protect the cable where passing through metal studs or anything that can possibly damage them.
- ✓ **DO** test every installed cable run with a cable tester. "Toning" alone is not acceptable.
- ✓ **DO** label every termination point. Use a unique identifier for each cable run. It will make moves, adds, changes, and troubleshooting easier.
- ✓ **DO** support horizontal cable bundles using board supports, J-hooks, or cable trays.
- ✓ **DO** have signal cables cross at right angles to power cables to minimize induced interference.
- ✓ **DO** always obey all local and national fire and building codes. Be sure to "firestop" all cables that penetrate a firewall. Use plenum-rated cable where mandated.
- ✓ **DO** follow the grounding and bonding requirements established by Electrical Code TIA standard 607, and equipment manufacturer's specifications.
- ✓ **DO NOT** locate the DMC3-4 Master Station or Room Stations in an exterior wall.
- ✓ **DO NOT** locate the DMC3-4 Master Station or Room Stations in any wall cavity with any other electrical wiring in the cavity.
- ✓ **DO NOT** locate Patio Stations in places with direct exposure to sun and weather or in locations that receive direct water spray.
- ✓ **DO NOT** attach non line-level audio devices or non M&S authorized equipment to the system.
- ✓ **DO NOT** power up Master Station until all speakers and stations are connected.
- ✓ **DO NOT** splice or repair cables damaged during wire pulling, install a new cable.
- ✓ **DO NOT** coil or bundle the cables. This can cause electronic feedback.
- ✓ **DO NOT** over-tighten the screws for the volume controls, speakers, or the intercom Master Station to prevent cracking.
- ✓ **DO NOT** install any station or speaker cables inside the 120 VAC transformer enclosure.
- ✓ **DO NOT** tie cables to electrical conduits or lay cables on electrical fixtures. Keep cables at least 16" away from fluorescent lights, HID light fixtures, or dimmers.
- ✓ **DO NOT** allow the cable to be sharply bent or kinked at any time.
- ✓ **DO NOT** install cables "taught" in the ceiling or elsewhere. A good installation should have cables loose, but never sagging.
- ✓ **DO NOT** run signal cables parallel to power cables without adequate separation to minimize induced interference.
- ✓ **DO NOT** exert more than 25 pounds of tension on 4-pair cables.
- ✓ **DO NOT** step on Cat-5 cable during installation.
- ✓ **DO NOT** overtighten the cable ties, apply cable ties loosely, with random spacing.
- ✓ **DO NOT** untwist the wire pairs in Cat-5 cable more than 1/2" to avoid crosstalk.

## WIRING CAUTIONS

- A licensed electrician must run a 120 VAC line from **A DEDICATED 15-AMP BREAKER** to the DMC3-4 (and DMCBT, if equipped) transformer(s).
- Use existing wire or suggested replacement wire for all DMC3-4 wire runs excluding Door Station wire runs. For Door Stations, use the M&S Systems brand MS4DCXSC wire that is included with the DMC1H or DMC1HC wall housing kits.
- Individual wire runs should not exceed 350 feet from any single room or Door Station to the DMC3-4 Master Station or 1000 feet total for the entire system.
- Label all wire runs. Connecting the wires to the DMC3-4 Master Station, Room Station, or Door Station incorrectly may result in system damage.
- Run a single cable from the Master Station unit location to each Room Station and Door Station in a "home run" fashion. Do not loop cable from one Room Station to another.
- **DO NOT STAPLE CABLES.** Staples cause shorts.
- **DO NOT SPLICE CABLES.** Splices are unreliable and defeat the signal isolation properties of the cable.
- **KEEP CABLES, ROOM STATIONS, AND PATIO STATIONS AT LEAST 18 INCHES FROM FLUORESCENT LIGHT FIXTURES, DIMER CONTROLS, AND ALL OTHER WIRING.** This includes AC wiring, security cable, and other control wires. These can cause a "hum" or "buzzing" sound.
- Keep cables away from objects such as heating and air conditioning ducts, metal construction plates, and anything else with sharp edges that can damage the cables.

## ROOM STATION CAUTIONS

Careful consideration should be used when determining the location of the Room Stations. **DO NOT** install these devices in the following locations:

- ✓ **DO NOT** install Room Stations near air return ducts.
- ✓ **DO NOT** install Room Stations in exterior walls. Insulation materials will change speaker range and efficiency. Temperature changes in the wall will reduce speaker life.
- ✓ **DO NOT** install Room Stations in saunas. They will not withstand the extreme heat and moisture.
- ✓ **DO NOT** install Room Stations underneath cabinets or over counter tops.
- ✓ **DO NOT** install Room Stations in stud cavities with other wiring or appliances.
- ✓ **DO NOT** install Room Stations within 10 feet of other Room Stations or the DMC3-4 Master Station unit. This will cause acoustical feedback.
- ✓ **DO NOT** install Room Stations in stud cavities with other Room Stations or the DMC3-4 Master Station unit. This will cause acoustical feedback.
- ✓ **DO NOT** install Room Stations facing other Room Stations or the DMC3-4 Master Station unit. This will cause acoustical feedback.

Be sure that all Room Station mounting rings are level and oriented as shown in these instructions.

**Failure to adhere to these instructions can cause equipment malfunction and void any warranty covered by Nortek Security & Control LLC.**

# INSTALLATION OVERVIEW

The DMC3-4 retrofit installation is completed using the following steps:

- Develop the job estimate
- Removal of the old intercom system
- Install the DMC1H or DMC1HC housing
- Replace the room and patio stations (*NOTE: Do not remove the existing room and patio station mounting rings*)
- Replace the door station(s) (*NOTE: Do not remove the door station mounting enclosure*)
- Install the DMC3-4 master and make all room, patio, and door station connections
- Install the optional DMCBT Bluetooth Player
- Test the system

✓ *NOTE: All retrofit installations with existing "loop" wiring (master to station, station to station) must be replaced with "home run" wiring (master to each station).*

The following tools are required for the DMC3-4 installation. You may not need to use all these tools on each install but having them handy will make the overall installation process easier. The use of these or other tools is dependent on the existing intercom system installation:

- #2 Phillips screwdriver
- Wire stripper/cutter
- Tape measure
- Level
- Tin snips
- Digital multimeter (DMM)
- Small (or precision size) Philips and flat head screwdrivers
- Power drill with 1" auger
- Small crowbar
- Large flat head screwdriver
- Rubber mallet
- Extension cord
- Wood chisel
- Dry wall saw

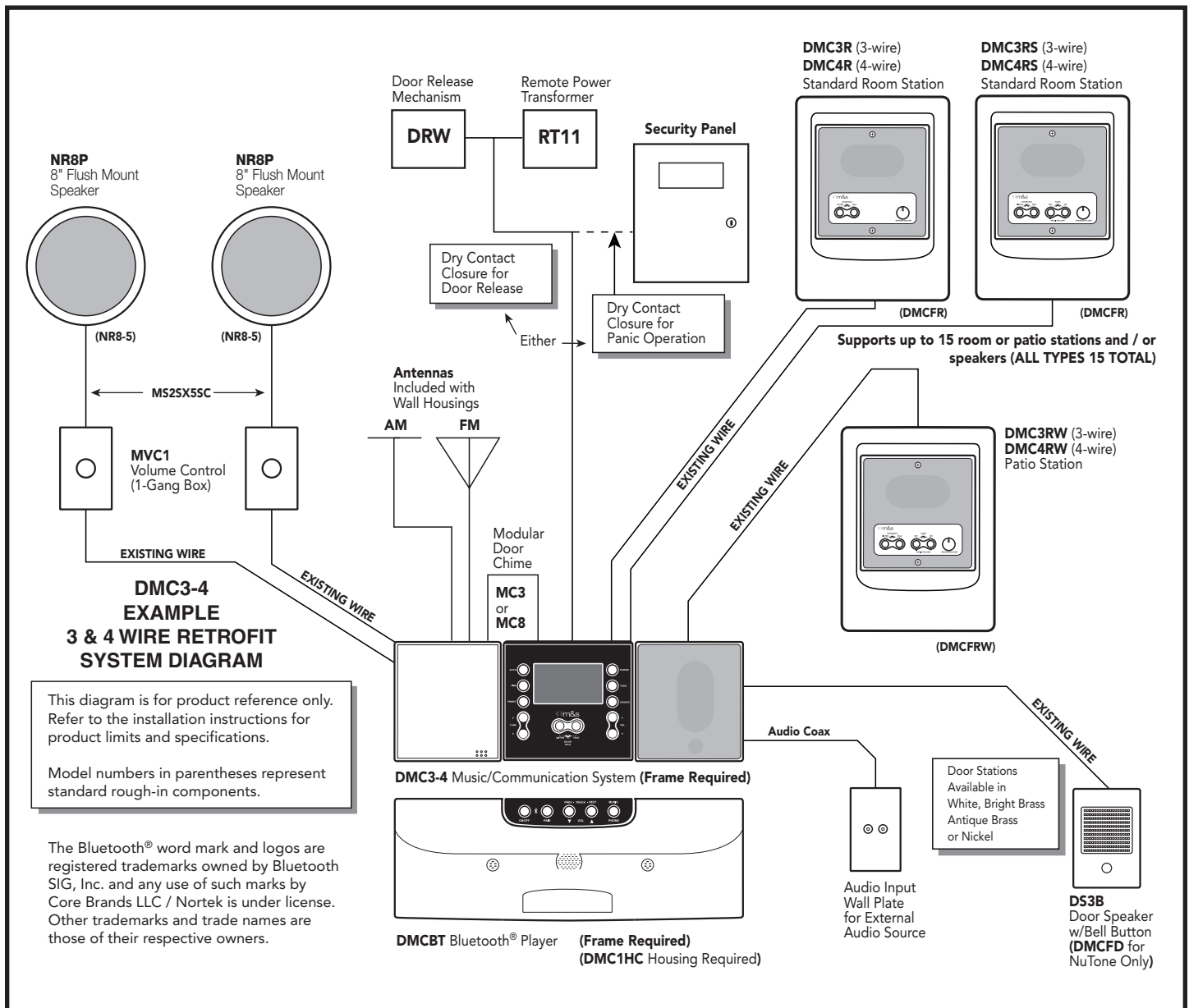


Figure 1. System Diagram

## DEVELOP THE JOB ESTIMATE

It is critical that you determine the complexity of each retrofit installation prior to developing the job estimate. It is hard to predict all the unique situations you will encounter in the field. For this reason M&S Systems recommends you visit each retrofit site prior to developing a job estimate and ordering equipment. During this on site visit, it is recommended that you complete the items listed below:

- Determine the model number and manufacturer of the existing intercom system.
- Count the number of room, patio, and door stations.
- Determine if the door and patio stations are surface or flush mount.
- Remove the master from the wall to see if any non-standard installation situations might exist, including:
  - ✓ Electrical running through the wall housing
  - ✓ Telephone wires running through the wall housing
  - ✓ Stud spacing that varies from a standard 16" on center spacing
  - ✓ The type of wire used for room, door, and patio station runs (M&S, NuTone or other such as telephone wire) - If you encounter non-standard wire contact our Technical Support team at 1-800-421-1587 for assistance.
  - ✓ A remote transformer
  - ✓ A remote door chime

The answers to the above information will help you scope, price, and install the retrofit system.

## REMOVING THE OLD SYSTEM

Prior to removing the existing intercom system make sure all power is turned off at the intercom location. Remove the screws from the intercom master and while removing the intercom, make sure to carefully label each wire with its corresponding room location. Disconnect all the room station and door station wires from the master. Then carefully remove the existing wall housing and transformers. If the existing system was not working prior to replacement, check each wire run between the room stations and master for shorts and wiring integrity. If one of these room station to master wire runs has a short, re-run that wire prior to installing the DMC3-4. When replacing wire runs use 22 AWG twin pair shielded wire with drain wires (Belden 7838A, Belden 9184, or equivalent). This wire will work for both 3-wire and 4-wire installations. On 4-wire installations use the wire as is and on 3-wire runs do not use the white wire.

- ✓ *NOTE: If you encounter 120 VAC running through the existing wall housing, have a qualified electrician reroute the 120 VAC around the wall housing.*

If you encounter a remote transformer, an additional electrical run may have to be made by a qualified electrician to power the DMC3-4 Master Station and/or optional DMCBT Bluetooth Player. Also check to make sure that the area around the housing is clear of any additional 120 VAC runs or other obstructions.

### ***Retrofit Installation Reference***

- The DMC3-4 is for retrofit intercom installations replacing 3-wire, 4-wire, and 5-wire intercom systems.
- 6-wire, 7-wire, & 8-wire retrofit intercom installations require using the DMC1 Master Station and DMC1 room and patio stations.
- Please refer to Appendix A in the back of this manual for a table showing which DMC configuration to use when retrofitting various older models of NuTone and M&S Systems intercoms.

### ***Retrofit Frame Reference***

- **DMCFM** – Replacing a master only system with a DMC3-4 Master Station
- **DMCFC** – Replacing a combination system with a DMC3-4 Master Station and a DMCBT player
- **DMC1F** – Replacing a master only system with a DMC3-4 Master Station and a DMCBT player (requires the hole in the wall to be made larger)
- **DMCFR** – Used on all indoor room station replacements
- **DMCFRW** – Used on all outdoor or high sun area flush mount room station replacements
- **DMC1HRWS** – Used on all outdoor surface mount room station replacements
- **DMCFD** – Used on NuTone door station replacements, not required for M&S replacements

## INSTALLING THE WALL HOUSING

The DMC1H and DMC1HC housings are designed for 16" on center studs. You may encounter stud spacings that vary from this standard.

- Use the **DMC1H** housing when you are replacing an existing system with an **intercom only** system.
- The **DMC1HC** housing is used for **combination systems** only – or those that include the DMC3-4 master and the optional DMCBT Bluetooth Player.

Locate the DMC1H or DMC1HC (combo) wall housing between the studs (see Figures 2 & 3). The housing must be positioned so that the transformer knockout(s) are on the bottom of the wall housing as shown.

If you are replacing the existing master only system with a combination DMC3-4 system with the DMCBT Bluetooth Player, you will have to cut the rough-in opening larger to accommodate the larger wall housing. Prior to making the cutout check the stud cavity for obstructions or items in the wall that may prevent the transformers from fitting in the wall.

1. Position the back side of the wall housing flush with the back of the 2 x 4 studs with the bottom edge approximately **59"** above the floor (**52"** above the floor for DMC1HC). Be sure the rectangular transformer mounting knockout(s) are on the bottom of the wall housing.
2. Attach the wall housing to the studs with wood screws. If the studs are spaced farther apart than 16", use wood shims to make up the difference. **ALWAYS SECURE THE WALL HOUSING ON BOTH SIDES.**
3. On the DMC1H, install the four 1-1/2" snap-in bushings into the round knockout holes.

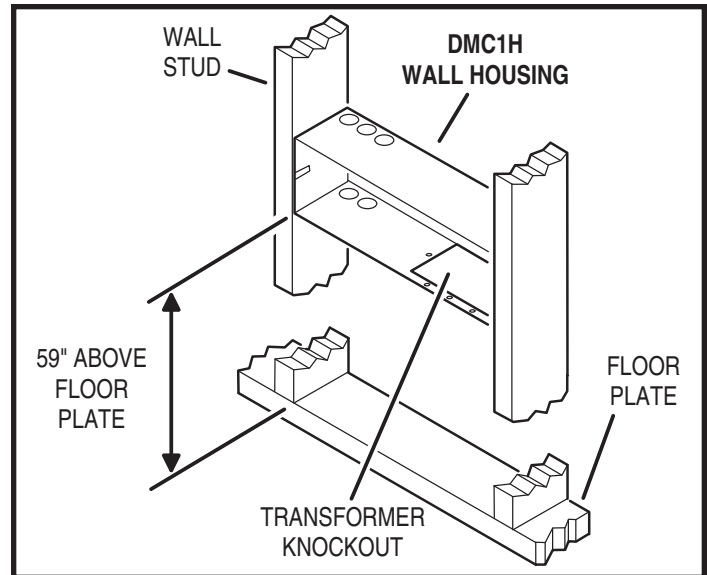


Figure 2. DMC1H Wall Housing Installation

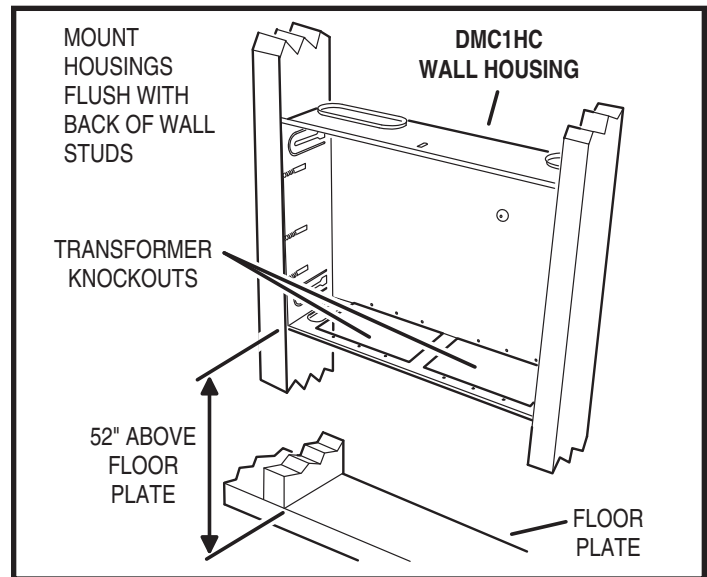


Figure 3. DMC1HC Wall Housing Installation



## TRANSFORMER INSTALLATION

The Model TE5D transformer powers the DMC3-4 Master Station. The Model TE2D transformer powers the optional DMCBT Bluetooth Player. Both transformers are supplied in a small metal enclosure that mount in the bottom of the wall housing.

**⚡ WARNING ⚡**

**ALL AC ELECTRICAL CONNECTIONS TO THE POWER SOURCE AND THE TRANSFORMER(S) MUST BE MADE BY A LICENSED ELECTRICIAN AND MUST OBSERVE ALL NATIONAL AND LOCAL ELECTRICAL CODES.**

1. Route the existing 120 VAC power cable (including ground) from a *dedicated* 15-amp circuit breaker to the wall housing location. The DMC3-4 requires a dedicated power source to assure there's no interference from other equipment. The ground is required for good radio reception.
2. Slide the transformer enclosure(s) down into the rectangular transformer mounting knockout(s) on the bottom of the wall housing (see Figure 4).
3. If installing the second transformer for the DMCBT Bluetooth Player option, cut a 1-1/2 foot length of power cable to loop between the two transformers. Insert an end of the cable into each of the transformer enclosures through the bottom knockout holes. Use wire nuts to connect the cable to the TE2D transformer BLACK (HOT) and WHITE (NEUTRAL) input wires. Connect the GREEN (GROUND) wire to the cable's ground conductor (see Figure 5).
4. Route the incoming power cable into the TE5D transformer enclosure through the bottom knockout hole. Use wire nuts to connect the incoming power cable to the TE5D transformer BLACK (HOT) and WHITE (NEUTRAL) input wires (and to the cable going to the TE2D transformer if installed). Connect the GREEN (GROUND) wire to the cable(s) ground conductor (see Figure 5).
5. Be sure all power cables entering the transformer enclosure(s) are secured with cable strain reliefs.
6. Tuck the cables into the transformer enclosure(s) followed by the transformer on its mounting plate. Secure the transformer(s) and enclosure(s) to the wall housing with the screws supplied (see Figure 6).

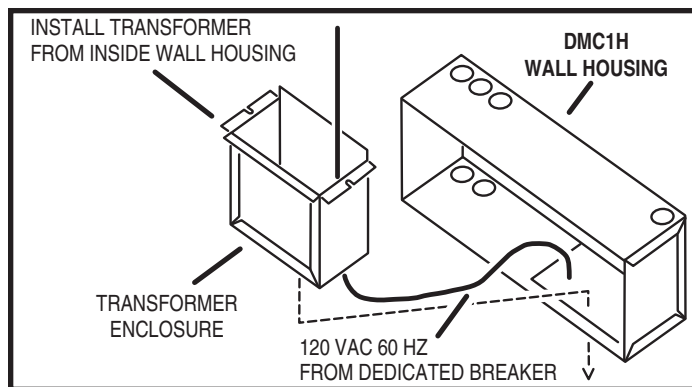


Figure 4. DMC1H Transformer Enclosure Installation

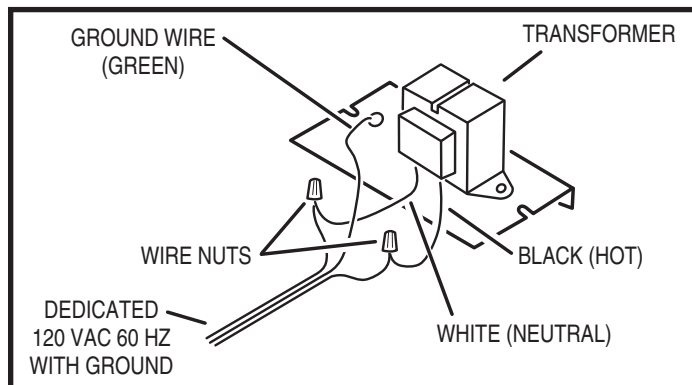


Figure 5. Transformer Power Wiring

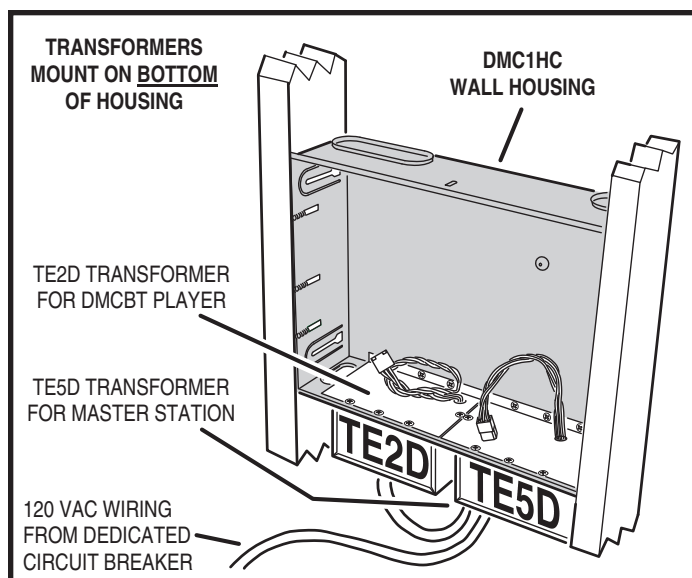


Figure 6. Completed Transformer Installation

## REPLACING THE ROOM STATIONS

The DMC room and door speakers use the existing wire and speaker rough-in mounting frames or boxes. To replace the speaker, first remove the old speaker. Leave the existing room or door station mounting rings in place.

After removing the room station verify the integrity of the wire run. Then install the mounting plate from the DMCFR (finish-out frame for room stations). Align the plate on the wall either vertically or horizontally so that the screw holes line up with those on the mounting ring or box. Use a level to make sure the plate is level. There are several screw hole locations on the mounting plate so it can attach to many rough-in designs. Mount the plate to the wall using the screws provided (Figure 7).

Next connect the wires to the retrofit room station as shown in Figure 8. Match the wire colors to the corresponding screw locations on the DMC3 or DMC4 room stations.

**Please make sure to use only DMC3 room stations in a 3-wire installation and DMC4 room stations in a 4-wire installation.**

**All 6-wire, 7-wire, & 8-wire installations use the DMC1 room stations.**

Please refer to Appendix A for a table of which NuTone and M&S Systems retrofit to the 3-wire, 4-wire, or 6-wire (requires DMC1 master) DMC configurations.

Refer to the tables below for 3-wire and 4-wire mapping:

| 3-WIRE SYSTEM                           |            |                   |
|---|------------|-------------------|
| Nutone Wire (IW3 or equivalent)         | M&S 3-Wire | DMC3-4 Equivalent |
| Silver outside or blue tracer           | White      | Black             |
| Center conductor or gray tracer         | Black      | Red               |
| Other outside copper wire or red tracer | Green      | Green             |

| 4-WIRE SYSTEM |  |                   |
|---------------|--|-------------------|
| M&S Wire      | M&S or NuTone 4-conductor gray jacket wire | DMC3-4 Equivalent |
| White         | Silver outside gray wire                   | White             |
| Black         | Next copper outside gray wire              | Black             |
| Red           | Next copper outside gray wire              | Red               |
| Green         | Outside copper outside gray wire           | Green             |

After connecting the room station to the existing wiring. Place the room station through the DMCFR plastic mounting plate. Position the plate either vertically or horizontally depending on the room station replaced. Place the room station into the rough-in ring and align the frame with the room station as shown in Figure 9. Use the screws provided with the room station to screw the room station and frame into place. The holes in the room station align with the holes in the mounting plate. The room station keeps the plastic frame in place on the wall.

✓ **NOTE:** The plastic frames are paintable. Please prime the plastic first and then apply standard room paint. The white plastic may require two coats of paint to get full coverage. It is recommended that you paint the frame prior to mounting it to the wall.

✓ **IMPORTANT:** Please label all cables at both ends. Incorrectly connecting cables to the master, room stations or door stations could result in system damage.

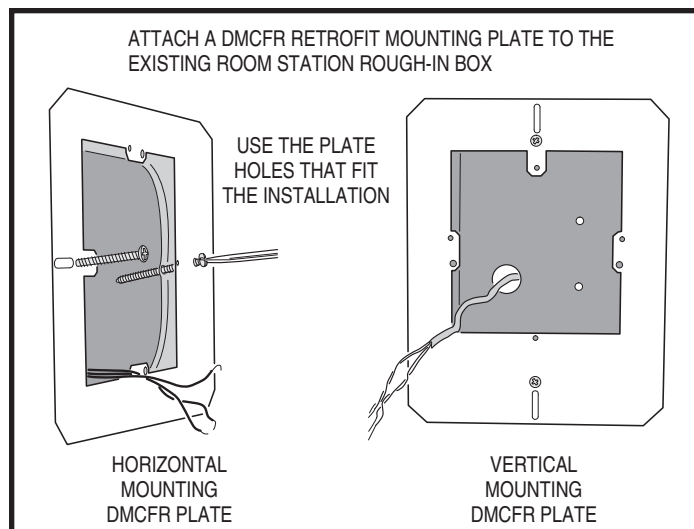


Figure 7. DMCFR Mounting Plate Installation

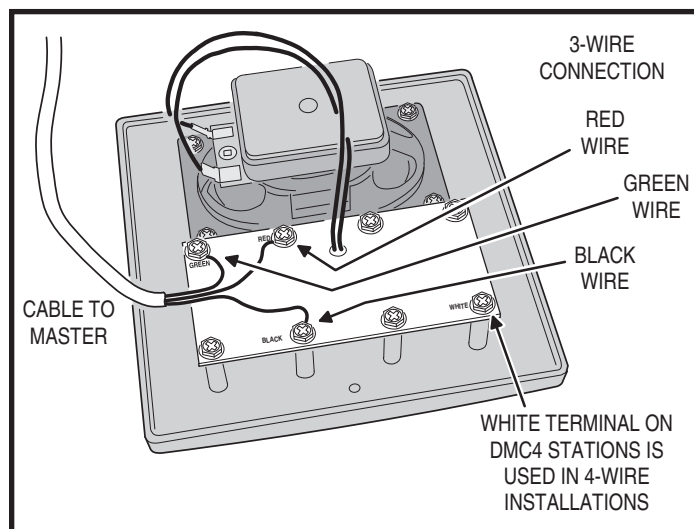


Figure 8. Room Station Wiring (3-Wire)

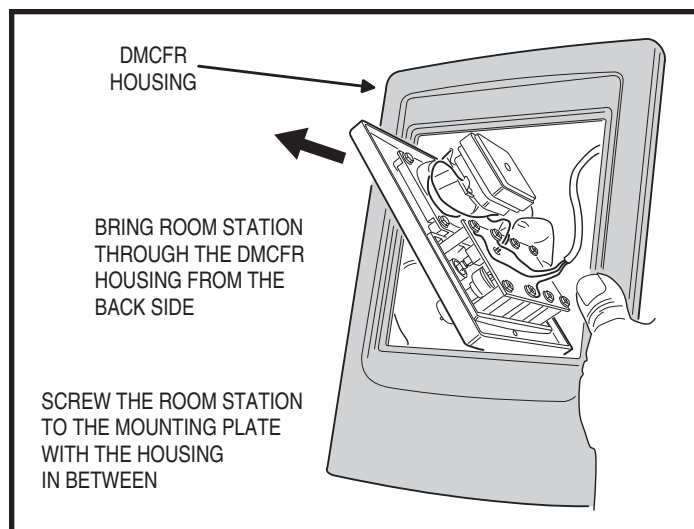


Figure 9. Fitting Room Station into the DMCFR Housing

## REPLACING PATIO STATIONS

Do not remove the existing patio station rough-in. The DMC3-4 retrofit system is designed to fit into the existing enclosure. It is important to note that M&S patio stations are weather resistant not water proof. M&S patio stations should not be located in an area that is in direct line of water from sprinklers, rain or other devices such as power washers.

Please use the DMCFRW finish-out frame in outdoor and high sun areas. The DMCFRW plastic is designed to withstand sun and resist fading.

If a patio requires a surface mount application use the DMC1HRWS. This is a surface mount box and cover that will support DMC3RW, or DMC4RW patio stations.

To install a patio station follow the "Replacing Room Stations" instructions detailed in the previous section.

## REPLACING DOOR STATIONS

Remove the old door station but do not remove the rough-in box or surface mount box.

When replacing a NuTone door speaker you must use the DMCFD finish-out frame. The M&S door station sets in the DMCFD and the screws attach to the existing rough-in.

Connect the door station with the corresponding color wires. Screw the door station or door station with DMCFD frame into the rough-in box as shown in Figure 10.

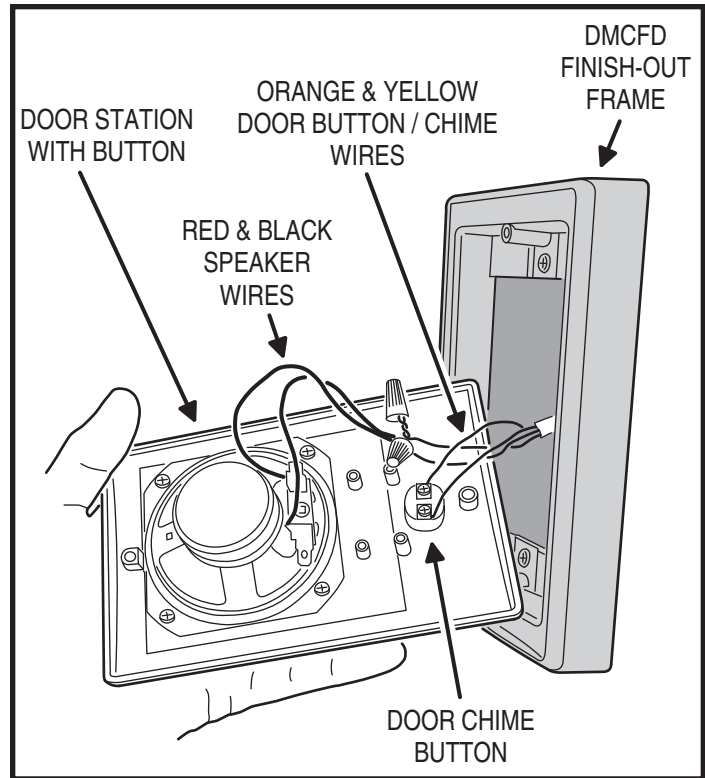


Figure 10. DMCFD Door Station Installation

## EXTERNAL MUSIC SOURCE

The DMC3-4 retrofit system supports the use of external music sources. A commonly available audio input wall plate can be used. You can use an existing connection or run a new coax cable pair to support local source connection (see Figure 11).

To install a new local source follow these steps:

1. Choose a location for the audio input wall plate that will be easily accessible to the sources that are to be connected to the system (close to the receiver, TV or DVD player for example).

✓ **NOTE:** The external source wire run to the DMC3-4 must not exceed 50 feet.

2. At this location, attach a single gang box to a wall stud at a center height of normal wall outlets. Use a low voltage plaster ring in existing construction installations. Make sure the single gang box extends past the wall stud and into the room so it will be flush with the sheetrock.
3. Run shielded audio cables from the DMC3-4 Master Station location to the audio input location. Connect the cables to the wall plate.

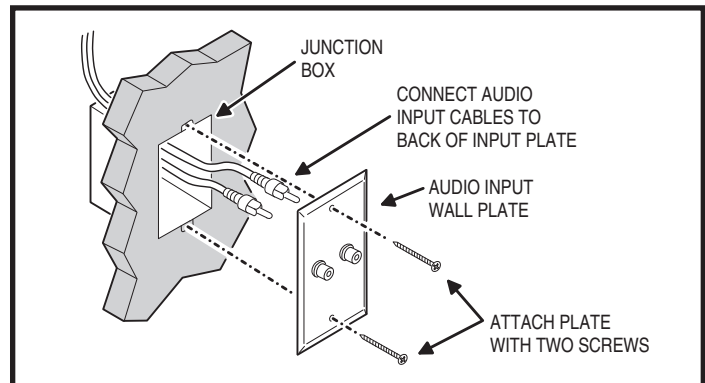


Figure 11. External Audio Input



## INSTALLING THE CHIME MODULE

Install the optional chime module MC3 or MC8 in the wall housing by pressing the chime module over the four plastic standoffs attached to the wall housing as shown in Figure 12. The DMC3-4 supports the 3-note Model MC3 and 8-note Model MC8 chime modules. The chime module installs inside the wall housing and is activated by the Door Station pushbutton.

1. Install the chime module circuit board by snapping it onto the four plastic mounting standoffs in the wall housing.
2. Refer to the instructions shipped with the chime module.

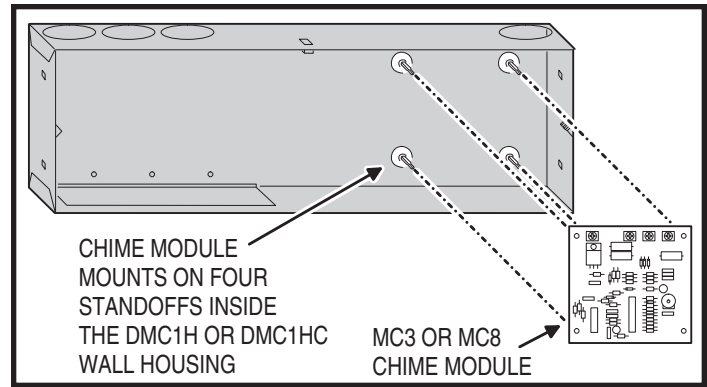


Figure 12. Chime Module Installation

## OPTIONAL DOOR RELEASE RELAY

The DMC3-4 Master Station contains a dry contact relay that can be used to control external devices. Typical applications include activating a door strike, triggering a panic alarm system, or controlling a home automation or lighting system. The door release relay has normally open contacts that are rated at 2 Amps @ 24 Volts AC/DC. The relay can be activated from the DMC3-4 Master Station or remote scan Room Stations (Model DMC3RS or DMC4RS) by pressing the volume up and volume down buttons together for four seconds. The relay will deactivate when the buttons are released.

Refer to the following steps for connecting a Model DRW Door Release Mechanism (see Figure 13). For controlling other devices, refer to the hook-up instructions supplied with the device.

1. Route 2-conductor 18 AWG cable from the DMC3-4 Master Station's wall housing to the door release location.
2. Route 2-conductor 18 AWG cable from the DMC3-4 Master Station's wall housing to a location for a Model RT11 Remote Transformer. The transformer plugs into a standard 120 VAC outlet.
3. Route the two cables into the Master Station's wall housing through the top left wiring access hole or slot. Leave about 12" of extra cable extending at the wall housing.
4. Zip-tie the two cables together and LABEL THE CABLES "Door Release".
5. Use a wire nut to connect one wire from the transformer cable to one wire from the door strike.

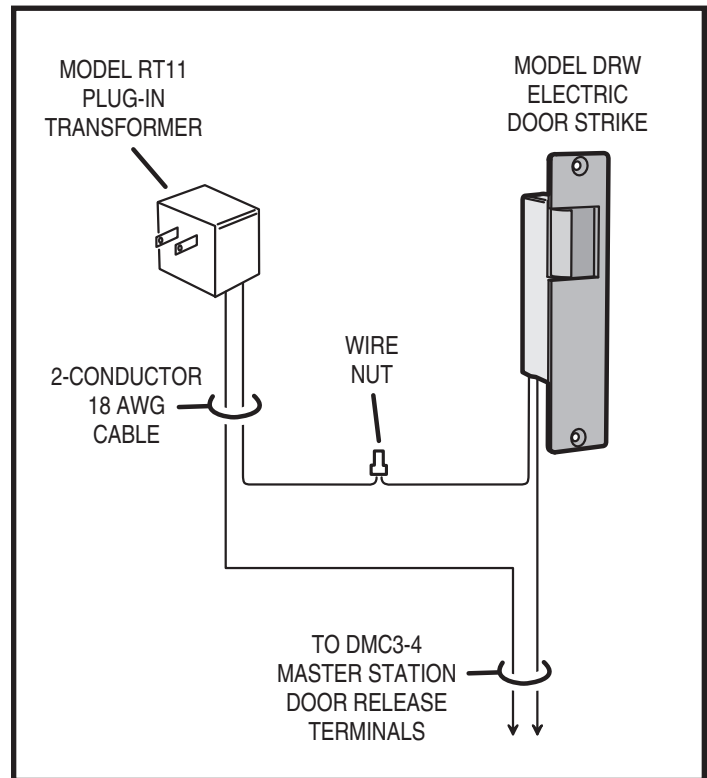


Figure 13. Door Release Wiring

# INSTALLING THE DMC3-4

## 3-wire or 4-wire Configuration Jumper Setting

The DMC3-4 ships configured for a 3-wire retrofit system. If you are replacing a 4-wire system you must change the jumper setup on the DMC3-4 Master Station. The jumper change must be completed before any cables are connected. To change the jumpers pull them off the 3-wire connector pins and place them onto the 4-wire connector pins (see Figure 14).

## Station Connections

During installation, suspend the master unit from the wall housing by looping the "third hand" wire (thick green wire) over the hook at the top of the housing (see Figure 15). Be careful not to damage the wall surface.

## Room Stations and Patio Stations

1. Connect each GREEN wire (except patio GREEN) to a single RM# green wire terminal on the master. Each numbered RM# green wire terminal corresponds to a remote station selector switch. Refer to Figure 16 for wire placement.

✓ **NOTE:** If the DMC3-4 system has more than 9 room stations, some room selector switches will control two room stations.

✓ **NOTE:** No more than three GREEN wires can be connected to any RM# GREEN wire terminal and not to exceed 15 stations for the 4-wire or 13 stations for the 3-wire system. This limitation does not include door stations.

2. The station location can be marked on the inside of the door access panel on the left side of the DMC3-4 Master Station.

3. Connect the GREEN wire(s) from the patio station(s) to the PATIO green wire terminal.

4. Connect the patio BLACK wire(s) to the patio BLACK terminal.

✓ **NOTE:** Only two patio stations can be connected to the patio terminals.

5. Combine the room station BLACK wires and connect to the BLACK terminal.

6. Combine the room and patio station RED wires and connect to the RED terminal.

7. Combine the room and patio station WHITE wires and connect to the WHITE terminal. **(4-Wire installations only.)**

8. When using shielded wire with drain wires, insulate the bare wires using some of the jacket material to prevent shorting to the circuit board. Combine all the drain wires and connect to the SHIELD terminal.

## Door Station Connections

1. Connect the RED and BLACK wires of the door station cables to the RED and BLACK door station terminals on the DMC3-4 Master Station (see Figure 16).

2. Connect all ORANGE wires from the door stations to the COMMON terminal on the MC3 or MC8 chime module.

3. Connect each YELLOW wire to a chime module NOTE selection terminal. (Do not connect more than one yellow wire per note terminal.)

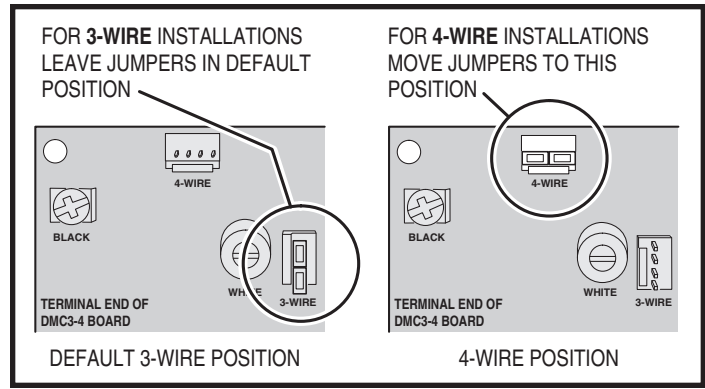


Figure 14. 3-Wire / 4-Wire Selection Jumper

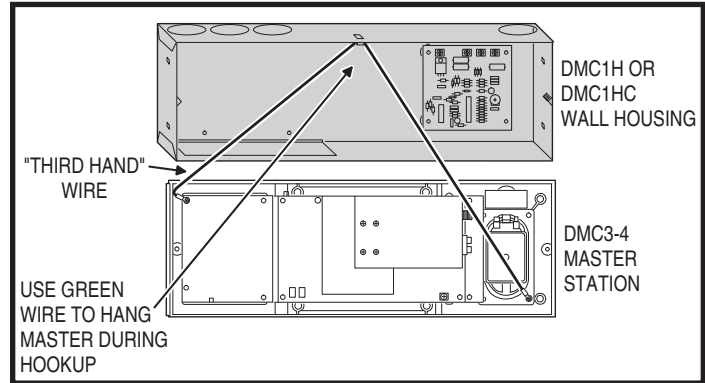


Figure 15. "Third Hand" Hanging Wire

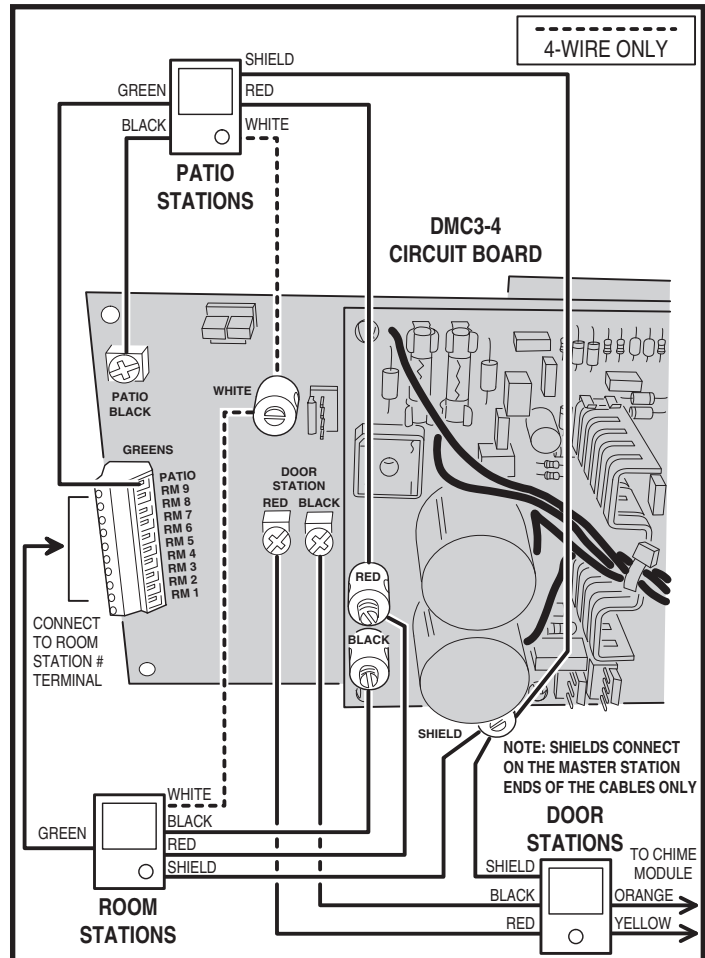


Figure 16. Room, Patio, & Door Station Connections

### Chime Connections

Plug in the modular chime plug to the 4-pin connector labeled as CHIME on the DMC3-4 Master Station (see Figure 17).

### Optional Door Release Connections

Connect the door release wires from each cable to the terminals marked DOOR RELEASE on the DMC3-4 Master Station (see Figure 18).

### Antenna Connections

The number and style of antenna leads will vary based on the intercom system being replaced. The DMC3-4 system is designed to use the existing antenna.

The AM antenna is typically a 25-foot length of wire with an in-line ferrite filter to reduce interference. The FM antenna is a 25-foot length of twin lead with a "T" shaped wire dipole at one end that attaches between rafters in the attic (see Figure 19).

✓ **IMPORTANT:** Isolate the antenna leads from the intercom station cables by running them through a separate hole in the ceiling plate and through the right hole in the top of the wall housing. If grouped together, the intercom station cables can shield the antenna leads resulting in poor radio reception. Also keep the antenna leads away from metal duct work and aluminum backed insulation, which also can reduce reception.

Follow the steps below to attach a 300 Ohm twin lead antenna to the DMC3-4.

1. If the antenna has a connector on the end, cut the connector off.
2. Strip the two wire ends.
3. Connect the wire ends to terminals **S1** and **S2** on the DMC3-4 antenna board.
4. Connect a bare jumper wire (a 22 gauge speaker wire works well) between terminals **S3** and **S4** on the DMC3-4 antenna board.

Follow the steps below to attach a separate AM/FM antenna system with 300 Ohm FM twin lead and orange AM antenna wire:

1. Connect the FM twin leads to terminals **S1** and **S2** on the DMC3-4 antenna board.
2. Connect the AM antenna (ORANGE wire) to terminal **S4** on the DMC3-4 antenna board.
3. Terminal **S3** is not used in this configuration.

Follow the steps below to connect a single orange wire antenna system:

1. Connect the ORANGE wire to either terminal **S1** or **S2** on the DMC3-4 antenna board.
- ✓ **NOTE:** Do not connect the wire to both terminals **S1** and **S2** doing this will short out the FM antenna signal.
2. Connect a bare jumper wire (a 22 gauge speaker wire works well) between terminals **S3** and **S4** on the DMC3-4 antenna board.

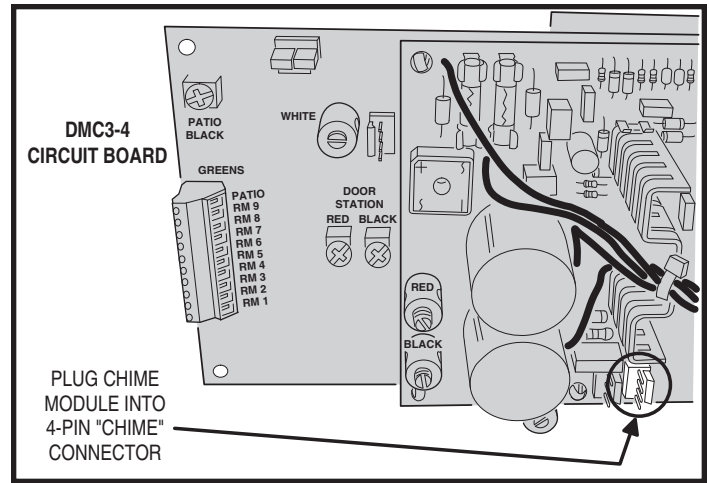


Figure 17. Chime Plug Connector

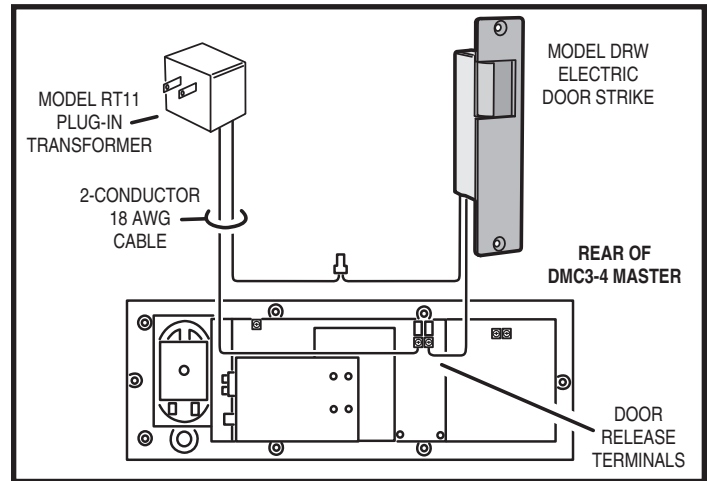


Figure 18. Door Release Connections

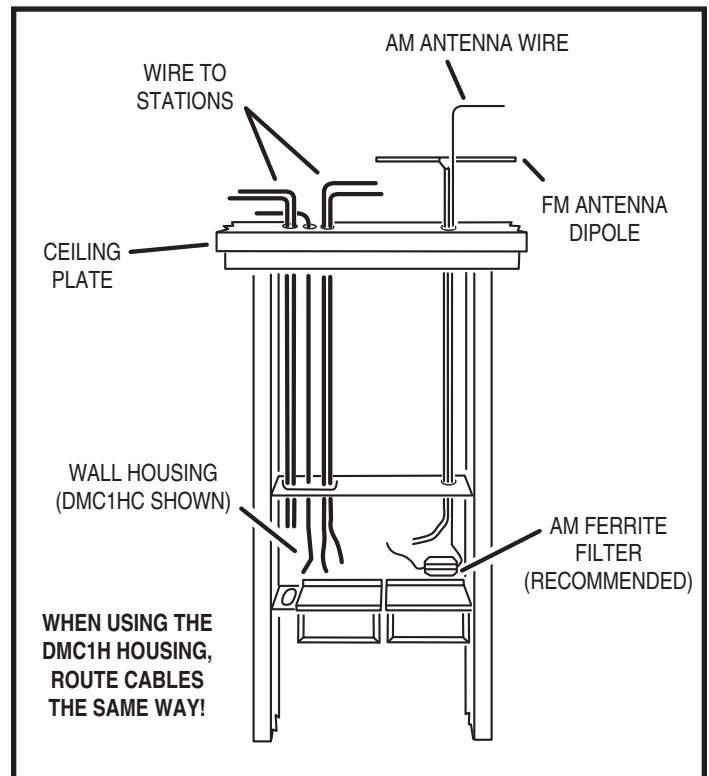


Figure 19. AM & FM Antenna Wiring

### Mounting in a Master Station Only Installation

When the DMC3-4 Master Station is used without the optional DMCBT Bluetooth Player, the DMC3-4 mounts inside the DMC1H wall housing.

Follow these steps for mounting the Master Station.

1. **Verify that the circuit breaker controlling the power to the wall housing transformer is OFF.**
2. Plug the connector on the DMC3-4 Master Station's wiring harness into the connector on the TE5D power transformer.
3. Secure the DMC3-4 Master Station to the wall housing using the two long screws provided (see Figure 20).
4. Install the speaker grille onto the right side of the DMC3-4 Master Station. **BE CAREFUL NOT TO PRESS IN THE CENTER OF THE GRILLE!** Only press around the edges.

### Mounting the Master with the Optional DMCBT Bluetooth Player

When the optional DMCBT Bluetooth Player is included, the DMC3-4 Master Station and the DMCBT Bluetooth Player mount inside the DMC1HC combination wall housing.

Follow these steps for mounting the Master Station and DMCBT Bluetooth Player:

1. **Verify that the circuit breaker controlling the power to the wall housing transformers is OFF.**
2. Insert the player audio cable's **BLACK** RCA plug into the CD L jack on the DMC3-4 Master Station, then insert the cable's **RED** RCA plug into the CD R jack on the DMC3-4 Master Station (see Figure 21).
3. Plug the connector on the DMC3-4 Master Station's wiring harness into the connector on the TE5D power transformer.
4. Position the DMC1F combination mounting frame over the DMC1HC wall housing with the larger opening toward the top.
5. Be sure to route the audio cables in through the top opening of the DMC1F frame then down and out the lower opening in the DMC1F frame.
6. Secure the DMC3-4 Master Station to the wall housing using the two long screws provided (see Figure 22). **DO NOT OVERTIGHTEN THE SCREWS THE FRAME MIGHT DISTORT OR CRACK!**
7. Install the speaker grille onto the right side of the DMC3-4 Master Station. **BE CAREFUL NOT TO PRESS IN THE CENTER OF THE GRILLE!** Only press around the edges.

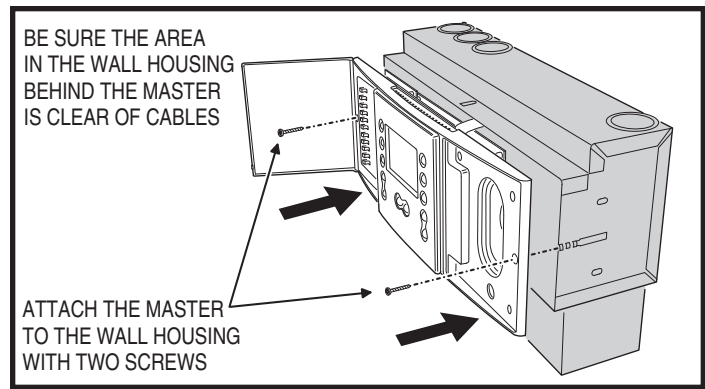


Figure 20. Master Station Only in DMC1H Wall Housing

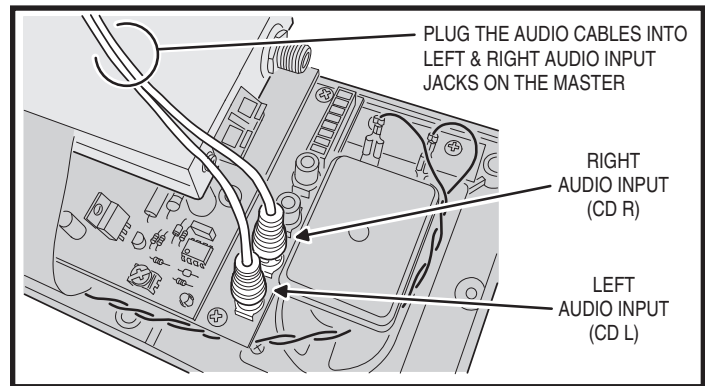


Figure 21. Audio Input Jacks on Master Station

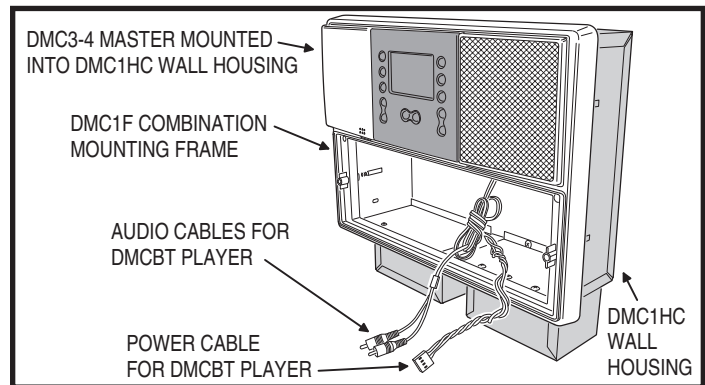


Figure 22. DMC3-4 & DMC1F Frame Ready for DMCBT Player

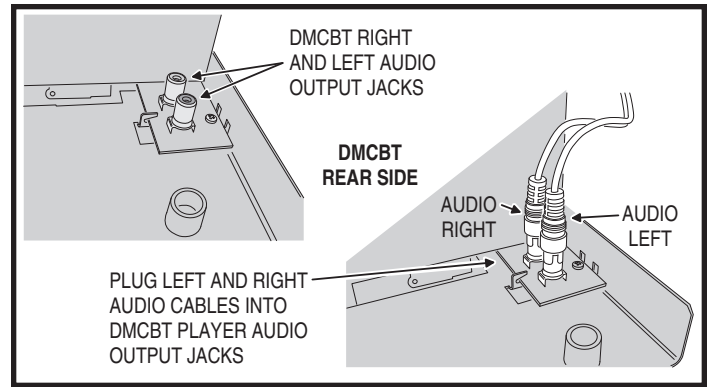
### **Mounting the Master with the Optional DMCBT Bluetooth Player (continued)**

8. Insert the player audio cable's BLACK RCA plug into the AUDIO LEFT jack on the DMCBT Bluetooth Player, then insert the cable's RED RCA plug into the AUDIO RIGHT jack on the DMCBT Bluetooth Player (see Figure 23).
9. Plug the connector from the TE2D power transformer in the wall housing to the DMCBT Bluetooth Player's POWER connector (see Figure 24).
10. Be sure that the area where the DMCBT Bluetooth Player will slide into the wall housing is free of cables and connectors that might be in the way when the player is inserted.
11. Attach the DMCBT Bluetooth Player to the wall housing using the two long screws provided. DO NOT OVERTIGHTEN THE SCREWS THE FRAME MIGHT DISTORT OR CRACK!
12. Connect the two ribbon cables from the Master Station to the connectors on the faceplate's circuit board. The connectors are keyed and will only fit in one direction (see Figure 25).
13. Install the DMCBT Bluetooth Player faceplate by pressing it onto the player (see Figure 26).

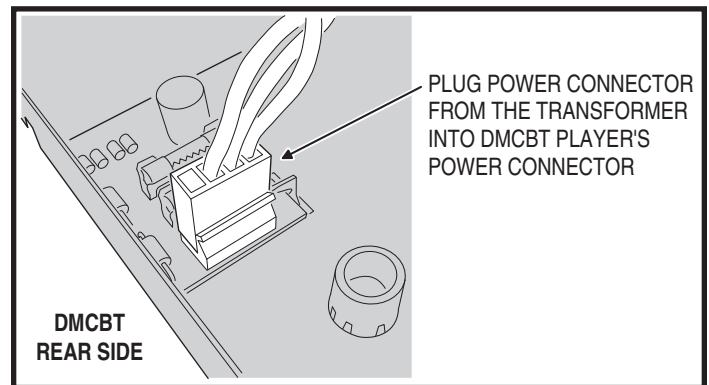
## **POWERING UP THE SYSTEM**

After all connections have been made and the unit(s) are installed into the wall housing, follow these steps to power up the DMC3-4 system.

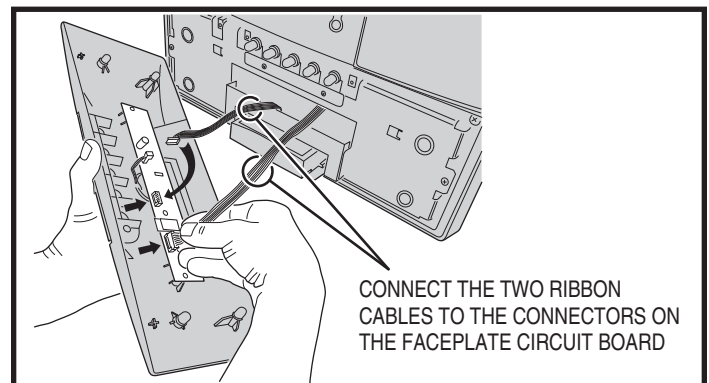
1. Turn the circuit breaker controlling the power to the wall housing transformer(s) ON.
2. Check all functions of the system. Refer to the Owner's Manual supplied with the DMC3-4 Master Station for operation details. If any difficulties are encountered, recheck all connections.



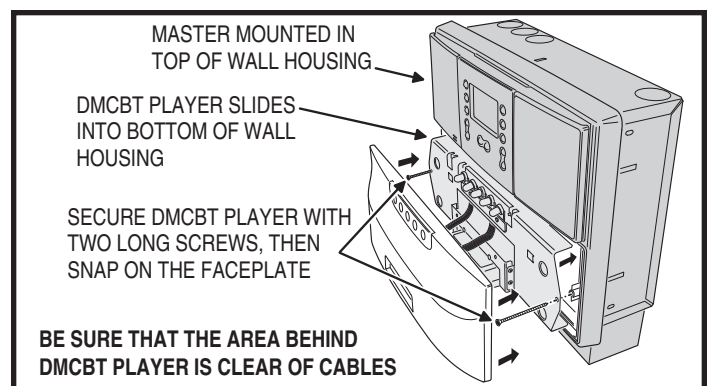
**Figure 23. DMCBT Player Audio Cable Connection**



**Figure 24. DMCBT Player Power Connection**



**Figure 25. DMCBT Faceplate Connections**



**Figure 26. Installing DMCBT Faceplate**



## APPENDIX A - RETROFIT COMPATIBILITY TABLE

| MANUFACTURER OF OLD INTERCOM | OLD MODEL TO RETROFIT | OLD MODEL WIRING SYSTEM | RETROFIT WITH 3-WIRE DMC3-4 SYSTEM | RETROFIT WITH 4-WIRE DMC3-4 SYSTEM | RETROFIT WITH 6-WIRE DMC1 SYSTEM |
|------------------------------|-----------------------|-------------------------|------------------------------------|------------------------------------|----------------------------------|
| M&S Systems                  | 5                     | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 6                     | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 10 Series             | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 20 Series             | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 30 Series             | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 40 Series             | 6-Wire System           |                                    |                                    | ✓                                |
|                              | 44 Series             | 6-Wire System           |                                    |                                    | ✓                                |
|                              | 52                    | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 70                    | 7-Wire System           |                                    |                                    | ✓                                |
|                              | 78                    | 7-Wire System           |                                    |                                    | ✓                                |
|                              | 80                    | 7-Wire System           |                                    |                                    | ✓                                |
|                              | 88 Series             | 7-Wire System           |                                    |                                    | ✓                                |
|                              | 100                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 150                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | MC170                 | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 200                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 220                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 250                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 300 - MC300           | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | MC302                 | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 330                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 333                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 338                   | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 350 -MC350            | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | MC350A                | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | 440 Series            | 6-Wire System           |                                    |                                    | ✓                                |
|                              | MC500                 | 7-Wire System           |                                    |                                    | ✓                                |
| MC602                        | 4-Wire System         |                         | ✓                                  |                                    |                                  |
| MC702                        | 6-Wire System         |                         |                                    | ✓                                  |                                  |
| MC800                        | 7-Wire System         |                         |                                    | ✓                                  |                                  |
| MC902                        | 7-Wire System         |                         |                                    | ✓                                  |                                  |
| NuTone                       | 2011/2012             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2015/2016             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2031/2032             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2053/2054             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2055/2056             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2063/2064             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2067/2068             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2071                  | 5-Wire System           | ✓                                  |                                    |                                  |
|                              | 2090/2091             | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | 2401/2402             | 8-Wire System           |                                    |                                    | ✓                                |
|                              | 2540/2541             | 6-Wire System           |                                    |                                    | ✓                                |
|                              | 2542                  | 6-Wire System           |                                    |                                    | ✓                                |
|                              | 2561/2562             | 8-Wire System           |                                    |                                    | ✓                                |
|                              | IM-203                | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IM-313                | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IM-406                | 6-Wire System           |                                    |                                    | ✓                                |
|                              | IM-3204               | 4-Wire System           |                                    | ✓                                  |                                  |
|                              | IM-3303               | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IM-4006               | 6-Wire System           |                                    |                                    | ✓                                |
|                              | IM-4406               | 6-Wire System           |                                    |                                    | ✓                                |
|                              | IMA-203D              | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IMA-303               | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IMA-2003              | 3-Wire System           | ✓                                  |                                    |                                  |
|                              | IMA-3003              | 3-Wire System           | ✓                                  |                                    |                                  |
| IMA-3303                     | 3-Wire System         | ✓                       |                                    |                                    |                                  |
| M-3103                       | 3-Wire System         | ✓                       |                                    |                                    |                                  |
| SM428                        | 8-Wire System         |                         |                                    | ✓                                  |                                  |

## **2-YEAR LIMITED WARRANTY**

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Nortek Security & Control LLC warrants its M&S Systems brand products to be free of defects for 2 years. The warranty period begins on either (a) the date of purchase or installation date of this product, or (b) the date of closing on a new residence in which this product was originally installed.

The warranty extends to the original user of the product and to each subsequent owner of the product during the term of the warranty. Nortek Security & Control will repair or replace, at its option, parts and materials at no charge. Parts supplied under this warranty may be new or rebuilt at the option of Nortek Security & Control.

If, during the warranty period, the product appears to have a defect, please call Nortek Security & Control Returns at 855-546-3351 prior to dismantling. Dismantling the product prior to calling may void the warranty. Before returning any product to Nortek Security & Control, obtain a Return Authorization (RA) number from Nortek Security & Control Returns. Nortek Security & Control will return the repaired product freight prepaid within the continental United States. ANY PRODUCT RETURNED TO NORTEK SECURITY & CONTROL WITHOUT AN RA NUMBER WILL BE REFUSED.

This limited warranty is in lieu of any other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose or otherwise, and of any other obligations or liability on the seller's part. This limited warranty does not cover damage caused by improper installation, acts of God, criminal acts, the violation of applicable building or electrical codes or the use of non-M&S wire or cable (excluding CAT-5 and RG-6).

Under no circumstances shall Nortek Security & Control be liable for consequential, incidental or special damages arising in connection with use, or inability to use this product. In no event shall Nortek Security & Control's liability hereunder exceed the cost of the product covered hereby. No person is authorized to assume for us or obligate us for any other liability in connection with the sale of this product. Some states do not allow the exclusion or limitation of consequential, incidental or special damages, so the above limitation or exclusion may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.



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