# Add-A-Com™

## Whole House Intercom
### for standard telephone systems

# User Guide

This guide describes how to install and operate your Add-A-Com™ Whole House Intercom for standard telephone systems.

Installing this unit will add intercom functionality to your existing home (or small business) telephone system. Alternatively, several standard telephones may be interconnected to form an intercom system not connected to an external telephone line.

The intercom is well suited to busy families who want to keep in touch, even while they are in different rooms. It is also excellent for invalids, to easily signal for occasional attention.

**Features** include:

- **Uses existing phones and wiring** – any mix of standard wired, wireless, and speakerphones matching any décor. No need for separate, dedicated intercom stations.
- **Distinctive ring** – signals intercom page to all household phones.
- **Call hold and transfer** – use the intercom to put an outside caller on hold, discuss with and transfer to another party. (Optional, enable with jumper setting.)
- **Multi-party room-to-room conferencing** – as many phones as desired can participate.
- **No need to miss calls** – outside calls ring into earpiece when intercom is active. Discontinue intercom use to answer normally, or let an answering machine take the call.
- **Internet compatible** – passes DSL signals continuously to household wiring.
- **Can install on vacant line** – of your existing, multi line phone system.
- **Easy, single-location installation** – mount one unit, and connect telephone wires and power.
- **Reclaim abandoned phones and wiring** – If you have "cut the cord" to your landline and gone cellular or digital, use your old phones and wiring for an intercom system.

- **Easy and economical to expand** – with readily available standard phones.
- **Power failure tolerant** – premises phones connected to Telco line if power fails.

When the intercom function is not in use, premises phones connect to the external telephone (Telco) line as usual.

## What's In The Box
In addition to this manual, you should find:
- Add-A-Com Intercom unit with internal circuit board
- Wall-mount 48 VDC power supply*
- Telephone Cable, 10 ft., 4 conductor
- 4 Telephone Wire Splicing Buttons
- 2 Wall Anchors
- 2 Mounting Screws

*North American plug adapter may be detached for shipment

## Using the Intercom – "Flash" to Operate
*Intercom Mode:* "Flash" a premises telephone off hook, i.e., take it off hook briefly, (0.2 – 2 seconds) then hang up again. The intercom disconnects premises telephones from the Telco line temporarily, and activates the intercom paging signal – a distinctive ringing cadence. After a suitable ringing period, (the intercom page is recognizable in about 5 seconds) pick up your phone and wait for someone to answer. When you take your phone off hook, (or someone else on premises goes off hook,) the intercom stops ringing and supplies talk current to premises phones. All off-hook parties can converse. When all premises phones go back on hook, the intercom reverts to Normal (transparent) operation.

If an external call comes in while talking on the intercom, you will hear the ringing signal in your earpiece. If desired, you can hang up all premises phones to let call ring through, and then answer normally. If an answering machine is connected to the

Telco line, you can let it answer the call while continuing your intercom conversation.

*Intercom/Hold Mode:* [*Note: This mode can be disabled for your installation.*] This is useful when you answer an external call that is for someone else. Flash your telephone on hook (0.2 – 2 seconds). The external call is put on hold, and the intercom becomes active. Hang up to activate the intercom paging signal. After a short signalling period, pick up your phone again to talk with anyone on premises who responds, all while the caller is on hold. Tell the other person to flash on hook to receive the external call, and then hang up. Flashing on hook ends Intercom/Hold mode, and reconnects the outside caller.

Note that an on hook flash only works if *just one phone* is off hook. If all phones are placed on hook in Intercom/Hold mode, Intercom/Hold mode remains active and the intercom paging signal is heard. To exit Intercom/Hold mode, you <u>must</u> perform an on hook flash.

*Normal (Transparent) Operation:* Most of the time, the intercom transparently connects premises wiring directly to the Telco line. Place and receive calls as if the intercom were not installed.

*Flashing the Telephone Company:* If Intercom/Hold mode is enabled and you want to activate a phone company feature with an on hook flash, such as responding to call waiting or three-way calling, you must double flash instead. That is because the intercom responds to a single on hook flash by entering Intercom/Hold mode, and does not present the flash to the Telco line. The second flash (if begun within 2 seconds after the first flash ends) is forwarded to the Telco line, and cancels Intercom/Hold mode. (Alternatively, you can disable Intercom/Hold mode for your installation.)

*Ringing Timeout:* If the intercom is left to ring premises phones continuously for 2 minutes, ringing timeout occurs. The intercom reverts to Normal (transparent) operation. If the extended ringing period was in Intercom/Hold mode, the outside call is dropped.

# Installing the intercom

You will need the following tools for installation:
- Pencil
- Drill with 3/16" bit
- Small hammer
- Phillips screwdriver
- Small sharp knife
- Wire cutters
- Pliers

Place your Add-A-Com unit on an indoor wall in its intended mounting position. The location should be inconspicuous but accessible, near a household power outlet, and preferably near your telephone company service line at a point before it connects to premises phones. Mark the mounting hole positions with pencil. Drill 3/16" holes at the marked locations. Tap the supplied anchors into the holes until flush. Affix the unit to the anchors with the mounting screws provided.
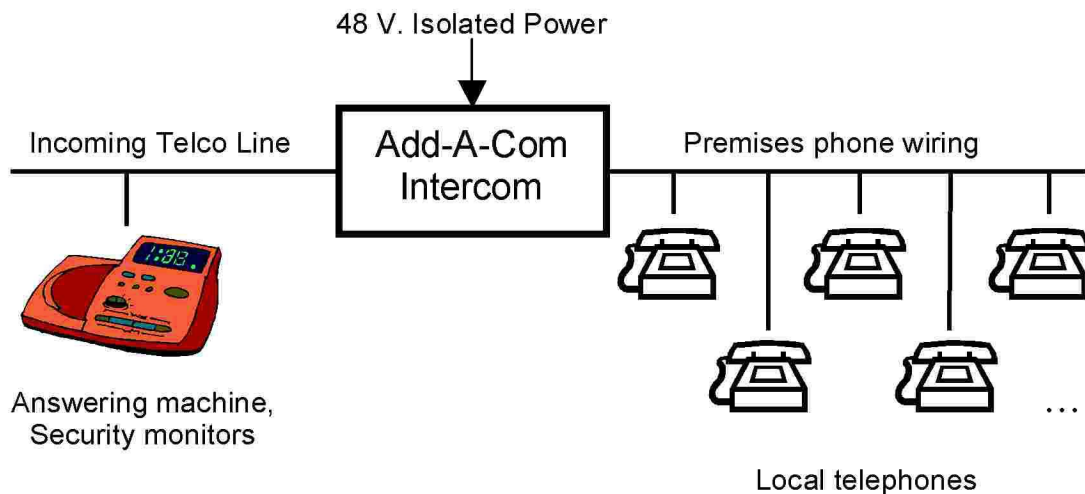


Fig. 1
Intercom Installation Schematic

If you use an answering machine, we recommend connecting it to the Telco service line, not to premises wiring. The answering machine can then pick up an incoming call even if the intercom is in use. Also, the answering machine will not be triggered by the intercom's paging signal. Similarly, if you have security

devices that must have continuous Telco line access, connect them directly to the Telco line.

You will need to break into (or cut) your Telco service line, so as to separately connect the Telco line and premises wiring to your intercom.

If multiple telephone lines enter your premises, the intercom can be installed on just one. All lines typically run in a single cable. Each individual telephone line comprises two physical wires, bundled within the cable as a twisted pair. You only need to cut into the pair that will connect to the intercom. If you are not sure which pair that is, observe the wire colors of the desired pair in the junction box where Telco wiring is connected to premises wiring. This is usually on an exterior wall. Green/red is common for the "first" pair, but not universal. In newer systems, white-striped blue/blue-striped white are commonly the "first" pair. Your cable may contain unused pairs.

If you are not sure where to break in to your telephone line, the Telco junction box is a good place to begin. You could connect the intercom right there, but an internal location is more convenient. Trace the premises wiring to a convenient place.

Your Add-A-Com is supplied with a length of 2-pair telephone cable. If needed, a longer cable is readily available at hardware and home improvement stores. Use the supplied splicing buttons to splice it into your telephone line as shown in Fig. 2 below. When using splicing buttons, you do not need to strip insulation from the cut ends of the wires. Insert the two wire ends to be spliced as far as they will go, and then crimp the button with pliers.
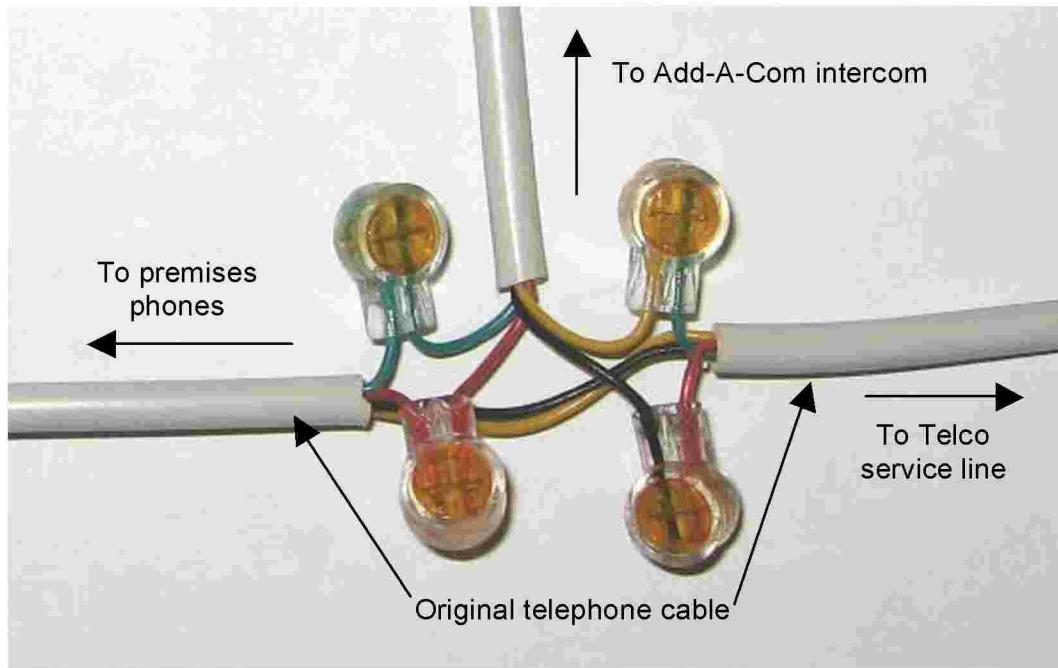
Fig. 2
Splicing Add-A-Com Cable To Telephone Cable

In our example, the Telephone cable has two pairs. Yours may have more, or just one. The green/red pair serves the desired line. Again, this could be different in your case. Carefully strip a length of the outside sheath to expose wires in the cable without damaging them. Cut only the pair that serves your desired line. Notice that the green/red pair to the Add-A-Com is spliced to the green/red pair that leads to premises wiring. The yellow/black pair to the Add-A-Com is spliced to the green/red pair of the incoming phone line. At the Add-A-Com end, the green/red pair must therefore be connected to the Local terminals, and the yellow/black pair to the Telco terminals.

Temporarily remove the cover from your intercom to access connections on the internal circuit board. Use straight-on motion so as not to disturb the position of the LED, directly under the small window in the center of the cover.
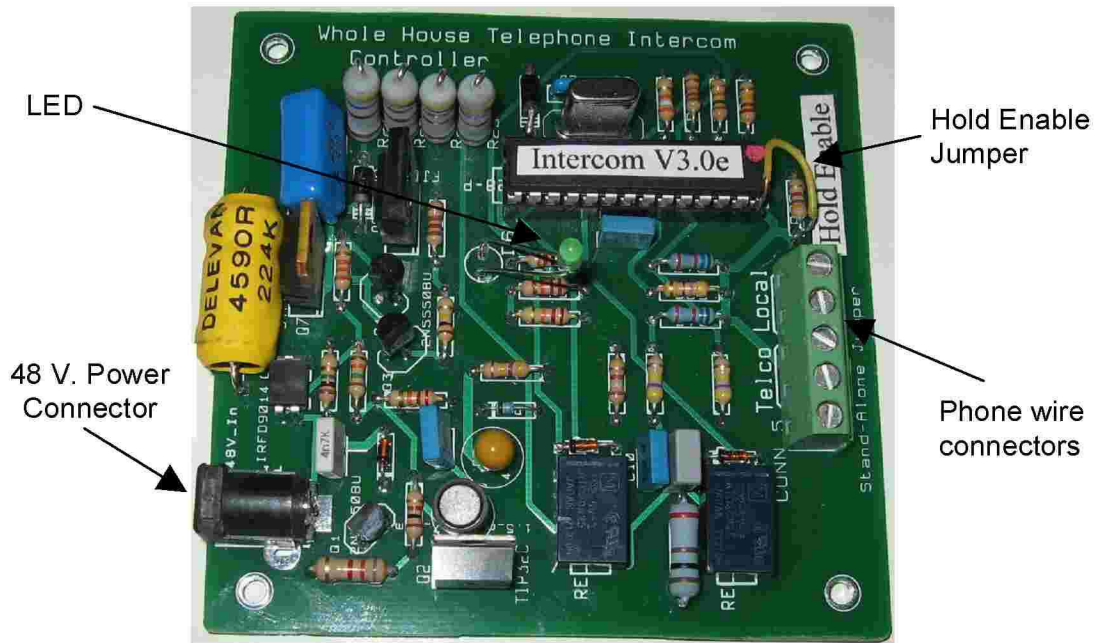
Fig. 3
Add-A-Com Circuit Board

Notice five screw terminals, located on the right-hand side. The top two terminals are labelled "Local", and the next two terminals are labelled "Telco". Corresponding wire pairs should be connected to these terminals. Strip about a quarter inch of insulation from the end of each of the four wires. The screw terminals should contact bare metal. In our example, the green/red pair connects to the top two terminals, and the yellow/black pair to the middle and second from bottom. Though telephones are rarely sensitive to polarity, connect wires in the order of our example (green, red, yellow, black) to retain your original premises polarity.

Before connecting power to your intercom, lift a premises phone and verify you hear a dial tone. If you do not, recheck your wiring. If you cannot find a problem, try connecting the premises wiring pair directly to the Telco pair. If this produces a dial tone, but connecting the premises pair through your intercom does not, your intercom unit is faulty. Contact Contemporary Communications, Inc. for repair or replacement.

When dial tone is verified, temporarily disconnect the local pair from the intercom. Lift a premises phone and verify it is silent.

If not, find and remove the unwanted connection between premises wiring and the Telco line. Reconnect the local pair to the intercom, and verify dial tone is again present.

Plug the intercom's wall-mount power supply into household power, and connect it to the barrel jack (labelled "48V_In") on the left-hand side of the circuit board. Thereafter, all telephone instruments connected to the Local terminals should participate in the intercom function. [*Note: use only an* isolated*, 48VDC, 250 – 330mA power supply with center-positive 2.1mm barrel plug.*]

Verify proper operation of the intercom function. The intercom should be able to ring premises phones, and should not ring phones connected to the Telco line. If it does not operate properly, carefully double check that you have connected the local and Telco wire pairs to their proper terminals, and that premises wiring is not connected to the Telco line except through the intercom.

*Intercom Only Installation:* It is possible to create an intercom system only, with no connection to an external telephone line. Use this configuration if you want to install the intercom on an unused line of a multi-line system. For this configuration, connect a short length of wire between the bottom and middle screw terminals – the terminals labelled "Stand-Alone Jumper". **CAUTION:** *Do not attempt to connect an external Telco line when a stand-alone jumper is connected.* Disable Intercom/Hold mode as discussed below.

**Enable or Disable Intercom/Hold Mode:** A "Hold Enable" jumper, connected by default, enables Intercom/Hold mode.

The Hold Enable Jumper is a short length of yellow wire (see Fig. 3.) To disconnect the jumper, cut this wire. To re-enable, strip a small amount of insulation from the cut ends, and twist them together.

Disconnect the Hold Enable jumper to disable Intercom/Hold mode. When disabled, Intercom/Hold mode will not be activated/de-activated by an on-hook flash during an outside call. When Intercom/Hold mode is disabled, a single on-hook flash is passed to the Telco line, and will activate telephone company features such as call waiting. When Intercom/Hold mode is enabled, a double flash is necessary to activate telephone company features.

To complete your installation, re-install the front cover of your intercom. A small window in the cover should allow you to continue to view the internal LED. Adjust the LED position if necessary.

**LED Diagnostics:** The LED on the circuit board lights to signal certain operating information.

When power is applied, the LED blinks briefly. After a short (1-2 seconds) start-up period, the LED blinks 2 – 4 times to indicate the configuration detected:

| No. of Blinks | Configuration |
|---|---|
| 2 | Stand-alone, no Telco line (Intercom/Hold mode disabled) |
| 3 | Intercom/Hold Mode disabled |
| 4 | Intercom/Hold enabled |

During operation, the LED signals a double flash each time the first premises phone goes off-hook, and a single flash when the last premises phone goes on-hook.

If you are using a stand-alone configuration, all phones are expected to be on hook during start-up. If one or more phones are off hook during start-up, a stand-alone jumper will **not** be detected, and an off-hook event will be signalled immediately following start-up. This will not cause operational problems if Intercom/Hold mode is disabled.

## Warranty and Support Information

Contemporary Communications, Inc. warrants your **complete satisfaction** with this product for 60 days from date of purchase. If not satisfied for any reason, you may return the product for a refund. In addition, Contemporary Communications, Inc. warrants this product free of defects for 1 year from date of purchase. Contemporary Communications, Inc. 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 Contemporary Communications, Inc.

Contemporary Communications, Inc. also offers free technical support via email, should you have questions about installation or usage. To arrange to return your product under this warranty, or request technical support, send your request to **intercom-support@joes.com**. Alternatively, you may use the form provided at **http://joes.com/intercom/support**. Proof of purchase, or other evidence of warranty coverage, is required pursuant to any return. Contemporary Communications, Inc. will return the repaired product freight pre-paid within the U.S.A. Please include a brief description of the problem, or a request for refund, and a dated proof-of-purchase receipt with any product that is returned under warranty.

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, the violation of applicable building or electrical codes or the use of an unapproved power supply.

Under no circumstances shall the seller be liable for consequential, incidental or special damages arising in connection with use, or inability to use this product. In no event shall seller's liability, for breach of warranty, breach of contract, negligence, strict liability, or any other theory exceed the cost of the product covered hereby. No person is authorized to assume for us 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 that vary from state to state.