AIPHONE P0015311Ⓐ0109Y

LEF-3L

3-Call Master Station with Selective Control Capability (Door Release or Camera Call-up)

Used with LE-D, LE-DA, LE-DL, LS-NVP/C Door Stations

- SUPPLEMENT TO LEF INSTRUCTIONS -

The LEF-3L is a compact, wall or desk mount master station able to selectively release a door or call up a camera.
Used with any LE-(except LEF-3,5 and 10) or LS-series (North America only) remote station, communication can be established with each station by selecting the channel on the master station. While the channel is selected, pressing the door release button (left of TALK button) will release only the associated door. When used for camera call-up, a relay closure will be maintained as long as a station is selected. The system can have up to four stations, in any combination of masters or door stations (e.g. 2 masters and 2 doors). Master-to-master communication is also a standard feature.
(If communication between masters is not required, multiple LEF-3L's can be used to talk to 3 door stations.)

PRECAUTIONS

General Prohibitions | Prohibition to Dismantle the Unit | Prohibition on Subjecting the Unit to Water | General Precautions

⚠WARNING *(Negligence could result in death or serious injury.)*

1. Do not dismantle or alter the unit. Fire or electric shock could result.
2. Do not connect any non-specified power source to the +, - terminals, and do not install two power supplies in parallel to a single input. Fire, damage to the unit, or system malfunction could result.
3. Keep the unit away from water or any other liquid. Fire or electric shock could result.
4. When existing chime wires are used, it is possible that they contain AC voltage. Electric shock or unit damage could result. Ask a qualified technician.
5. Do not use DC power supply with a voltage other than specified. Fire or electric shock could result.

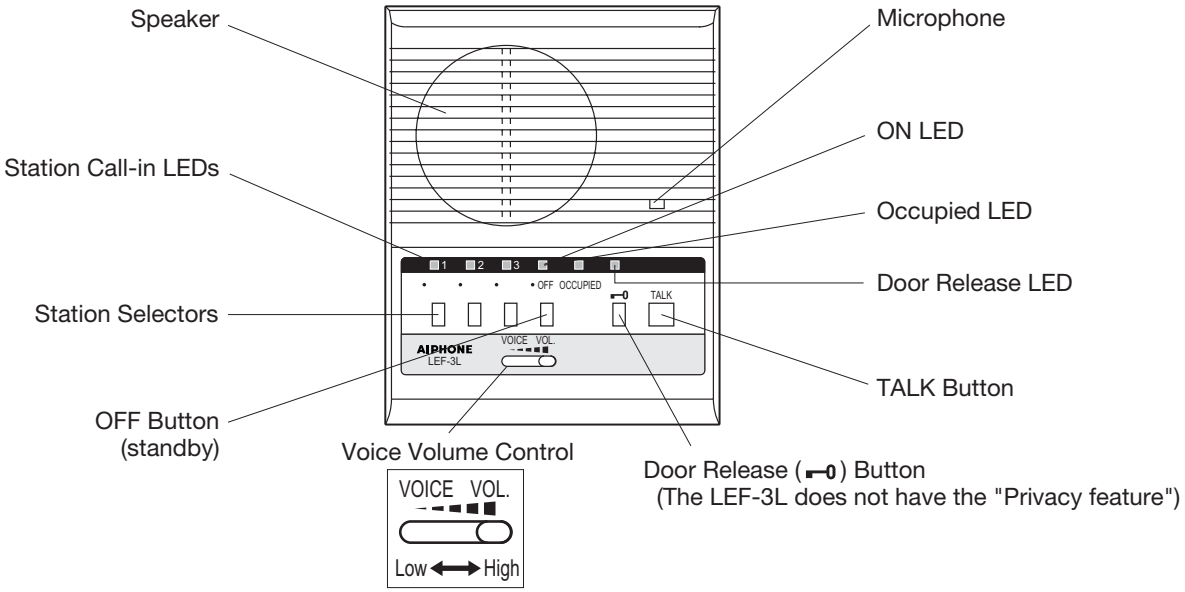
⚠CAUTION *(Negligence could result in injury or damage to property.)*

1. Before turning on the power, make sure wires are not crossed or shorted. Fire or electric shock could result.
2. When mounting the unit on wall, install the unit in a convenient location, but not where it could be jarred or bumped. Injury could result.
3. For DC powered systems, use Aiphone power supply model specified with system. If non-specified product is used, fire or malfunction could result.
4. Do not install or make any wire terminations while power supply is plugged in. It can cause electrical shock or damage to the unit.
5. In case of electrical storms, unplug the unit from AC outlet. If not, fire or electric shock could result.
6. Do not install the unit in any of the following locations. Fire, electric shock, or unit trouble could result.
   * Places under direct sunlight, or near heating equipment that varies in temperature.
   * Places subject to dust, oil, chemicals, hydrogen sulfide (hot spring).
   * Places subject to moisture and humidity extremes, such as bathroom, cellar, greenhouse, etc.
   * Places where the temperature is quite low, such as inside a refrigerated area or in front of air-conditioner.
   * Places subject to steam or smoke (near heating or cooking surfaces).
   * Where noise generating devices such as dimmer switches, invertor electrical appliances, are closeby.
7. Do not install the unit in a location subject to constant vibration or impact. If dropped, injury or unit damage could result.

⚠GENERAL PRECAUTIONS

1. Keep the unit more than 1 m (3.3') away from Radio or TV set.
2. In areas where broadcasting station antennas are close by, the intercom system may be affected by radio frequency interference.
3. The unit will be inoperative during a power outage.
4. This unit is for indoor use only. Do not use outdoors.

1 NAMES & FEATURES



FEATURES:

- Selective door release control
- CCTV camera call-up capability
- Single or multiple masters can be used in a system
- Intermixable, any number of masters and remotes up to 4 total stations
- Master to master communication in a multi-master system
- Single talkpath, with push-to-talk operation at master, and hands free communication at sub station
- Large variety of sub stations available
  - Surface or flush mount, with or without privacy (LE-A, LE-AN, LE-B, LE-BN)
  - Weather resistant door stations (LE-D, LE-DA, LE-DL)
  - Vandal proof sub stations (LE-SS, LE-SSR & LS-NVP/C)
- Subs call in with momentary tone and LED, remaining lit for approximately 20 seconds
- Selective calling to sub stations
- Selectively control external device from the master station in one of two ways with relay
  - Momentary closure while “Door release ( )” button is pressed
  - Maintained closure while station is selected
- Desk or wall mount

SOME APPLICATIONS:

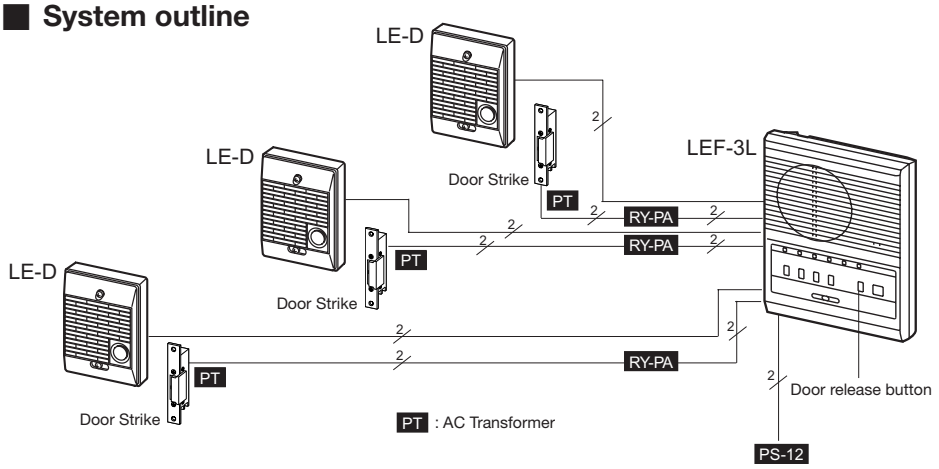
- *Offices*
- *Courthouses*
- *Hotels/Motels*
- *Retail/Convenience Stores*
- *Small Secured Facilities*

Wire Reference Chart (North America only)

Standard Communication				With selective door release and/ or camera call-up	
Model #	# of Conductors	Wire # (22AWG)	Wire # (18AWG)	# of Conductors	Wire # (22AWG)
LEF-3L	9	822210	x	12	822212
LE-A	3	822203	821803	x	x
LE-D	3	822203	821803	x	x
LE-DA	3	822203	821803	x	x

2 SYSTEM OUTLINE & COMPONENTS

■ System outline



■ Package contents

- LEF-3L
- Packet of screws
- Installation & Operation Manual

Individual Components for LEF-3L System:



LEF-3L
3-call master with selective door release



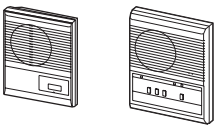
(LE-D)

LE-D
Surface mount door station

LE-DL
Surface mount door station (Aluminum)



LE-DA
Flush mount door station with stainless steel faceplate



LE-A
1-call sub station

LE-A3
3-call sub station

* : North America only

***LS-NVP/C**	Vandal and weather resistant sub station, white powder coated (optional SBX-NVP surface box)
***LE-SS**	Stainless Steel 2-Gang sub station
***LE-SSR**	Stainless Steel 2-Gang sub station with red mushroom push button
***SBX-2G**	Surface mount box for LE-SS and LE-SSR
***LE-SS-1G**	Stainless Steel 1-Gang sub station (optional SBX-SS-1G surface box)
***SA-1**	Surge Arrestor (1 per 2 wires being protected)
RY-PA	Relay, 12V DC input, N/O dry closure output. One required for each contact closure required off of each channel. Can be momentary or maintained, according to wiring.
***RY-18L**	12-18V DC “Form C” relay (N/O and N/C contacts)
PS-1225/UL/S	12V DC, 2.5A power supply, use for intercom only, 1 per system
PS-1215DIN	12V DC, 1.5A power supply, use for intercom only, 1 per system

LEF-3L TERMINAL DEFINITIONS:

+	Positive 12V DC
−	Negative
E	Common communication
1～3	Station number, communication to sub or other master
C	"CALL", for receiving a call from another master station
R	Occupied light control (0V DC when system is occupied)

COLOR-CODED WIRES:

White	Common Door release activation (+12V DC when door release button is pressed)
Brown	Ground when station 1 is pressed
Red	Ground when station 2 is pressed
Orange	Ground when station 3 is pressed

* North America only

2 SYSTEM OUTLINE & COMPONENTS (Cont.)

LE-D/LE-DA TERMINAL DEFINITIONS:

1 Station number
E Common communication
− Negative

*LS-NVP/C TERMINAL DEFINITIONS:

Red Station number
Black Common communication
Green Negative

*LE-SS(R)/LE-SS-1G COLOR CODE:

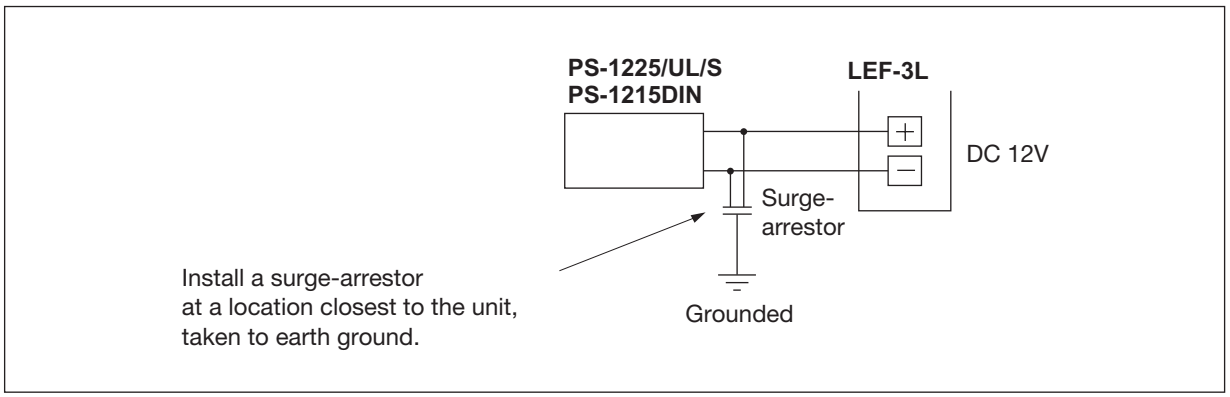
Red Station number
Black Common communication
Green Negative

* North America only

■ Precautions on Installation & Wiring

Before Installation:

- Make sure you have the proper power supply(ies) and all necessary and compatible equipment for the system.
- Lay out your system in advance, assigning station numbers for all sub station locations.
- Surge protection for the intercom equipment is recommended. Add SA-1 surge arrestors for the power supply, plus one per two wires connected to the master station.
- Any other manufacturer's products installed with this system (power supply, external signaling device, etc.) are not covered under Aiphone's warranty.
- When using a power supply that has no GROUND terminal, install a surge arrestor near the output as shown.
- Additional surge arrestors can be installed to protect communication lines. One surge arrestor per 2 wires on each master station.



Wire:

· Shielded wire is strongly recommended. Use the proper gauge for the distance being run.
· Wiring between masters must be a multi-conductor cable. If more than one cable is used to connect masters, the "E", "C", and number terminal wires must be in the same jacketed cable. If necessary, run multiple "E" wires, one in each cable.

Wiring Method:

· Run intercom cables at least 50cm (20") away from all AC wiring, fluorescent lights, dimmer switches, and other electrical or electronic devices. Intercom wiring can cross AC wires at 90 degrees.
· Sub stations can be homerun to the nearest master station, or daisy-chained. If daisy-chained, include 2 common wires plus 1 individual wire per station on the run.
· In a SINGLE MASTER SYSTEM ONLY: Subs can be wired with 2 conductors homerun. Jumpers between "E" and "-" must be attached on all subs and at the master station.

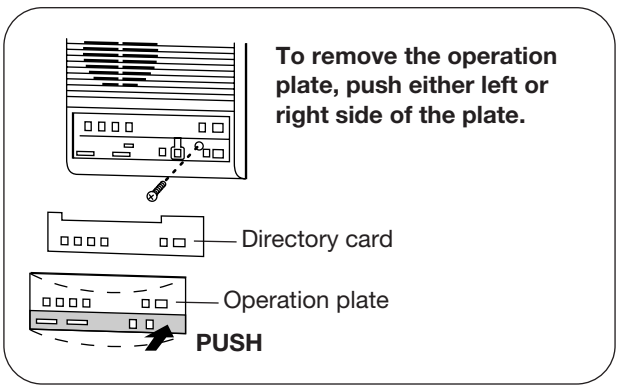
Intercom Locations:

· Do not install intercoms near dimmer or light switches, or other electrical wall devices.
· To prevent feedback, do not place sub stations back-to-back on a common wall.
· Near alarm panels or other electronic equipment that may emit data noise.
· Behind a doorway or any other area that may block access to the unit.

■ Before actually installing the LEF system, Precautions on Installation & Wiring must be thoroughly read and understood.

To access the inside of the unit for making wire connections:

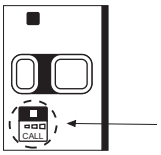
1. Remove Operation plate & Directory card and loosen the screw on the front of the unit. (Do not remove screw)
2. Carefully lift front of intercom up and off the back chassis.
3. If desired, unplug connectors and set unit aside during mounting and wiring of the back chassis.
4. When wiring is completed, plug in connectors and put unit back together. Peel protective covering off of Operation plate.



2 SYSTEM OUTLINE & COMPONENTS (Cont.)

■ Call tone adjustment

3-position volume switch, located under Operation plate.
Adjusts call tone volume to low (far left), medium, high (far right).



3-pos. call tone vol. switch
(under Operation plate)

LEF-3L

■ Selector switch for Call Tone in Occupied Mode

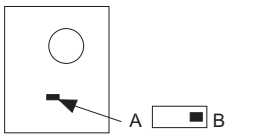
LEF surface mount master stations are set in the "B" position from the factory. This allows a sub call-in tone to be heard at a muted level while the master is in the occupied mode.

"A" position: Mutes call tone at master while system is in occupied mode.

"B" position: Call tone is heard when master is in occupied mode.

*No call tone between masters.

(FRONT CASE BACK VIEW)



LEF-3L (when shipped)

■ Cable requirements

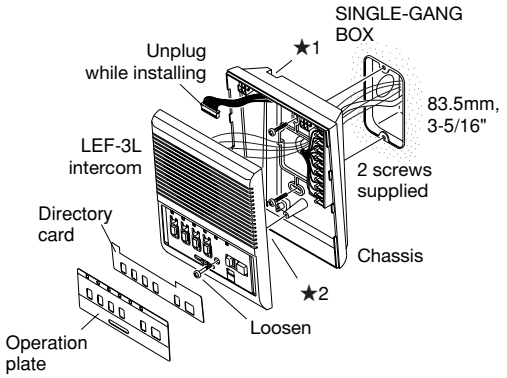
Use multi-conductor cable with an overall shield, non-twisted, 22AWG to 18AWG (0.65mm to 1.0mm), to accommodate the maximum number stations in the system.
Use the gauge specified for the maximum distance between the two farthest stations.

■ Power supply

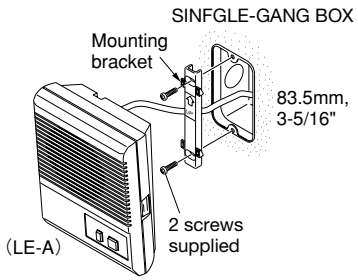
The entire LEF system can be powered by one power supply (PS-1225UL/PS-1225S 12VDC 2.5A or PS-1215DIN 12VDC 1.5A), located near the center of the wire run.
For a system including the All Call and Chime with the BG-10C, one PS-1225UL(S) or PS-1215DIN will power the BG-10C and the LEF system.

3 MOUNTING

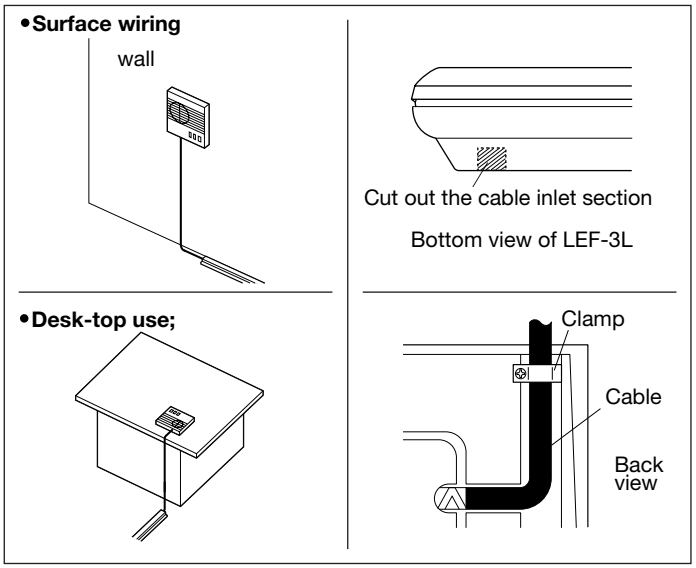
Back wiring



LE room subs

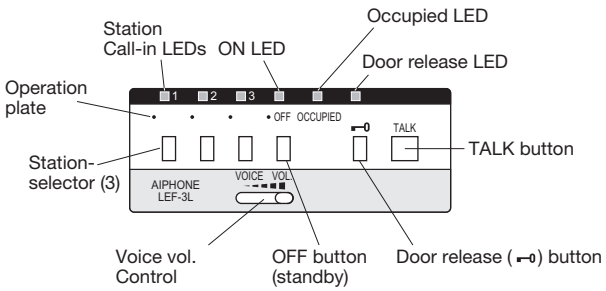


Surface wiring or Desk-top use



★1, 2 : When running cable on the surface, pass cable through the top or bottom of the chassis and fasten with the wire clamps (attached, one outside and one inside chassis). To pass the cable through the bottom side of the unit, cut out the cable inlet section.

OPERATION PANEL FOR LEF-3L

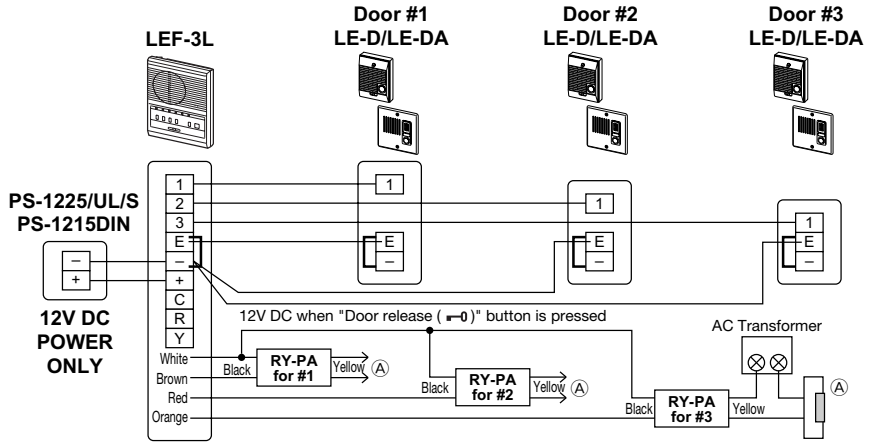


4 WIRING DIAGRAMS - Most Common Applications

1 x LEF-3L, 3 x Door Stations

WIth Selective Door Release

IMPORTANT: When using selective outputs, a separate relay and power source are required. Do not power external devices off of the system power supply.



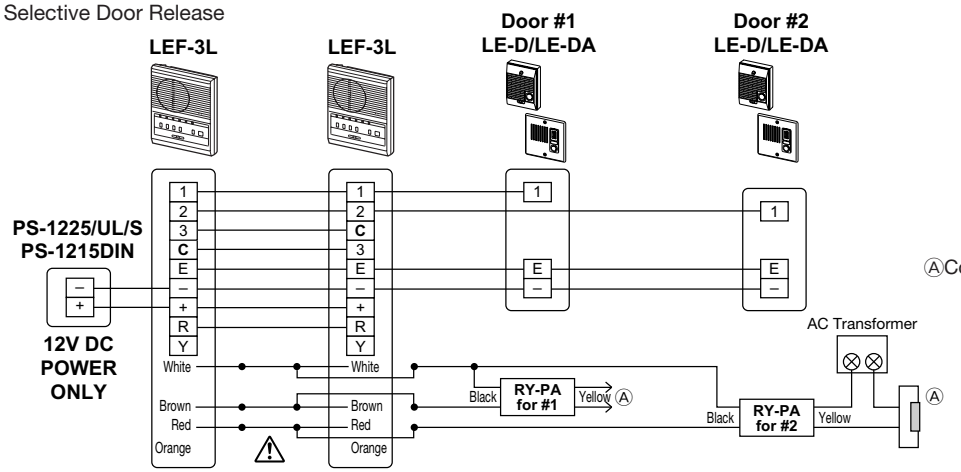
NOTE:
When running 2 conductors homerun to each sub (single master system only), leave jumper attached between E & — on master and door stations. Otherwise, remove jumpers and use separate wires for E and — terminals.

ⒶContact Rating: AC110V 1A
DC24V 1A

2 x LEF-3L, 2 x Door Stations

With Master to Master communication shown on channel 3

With Selective Door Release



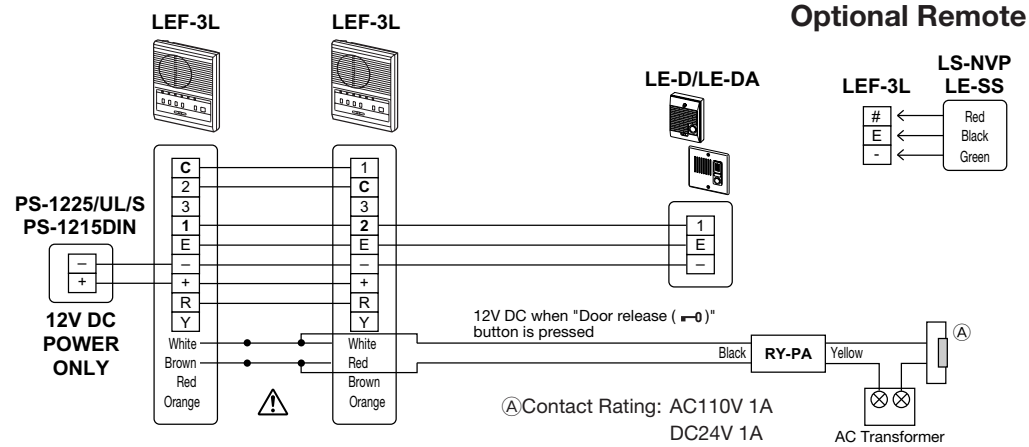
ⒶContact Rating: AC110V 1A
DC24V 1A

⚠ To prevent shorts, be sure to cut unused lead wires at the button and insulate the ends.

2 x LEF-3L, 1 x Door Station

With Master to Master Communication

Door Station wired on each station's own number terminal (different on each master)



ⒶContact Rating: AC110V 1A
DC24V 1A

⚠ To prevent shorts, be sure to cut unused lead wires at the button and insulate the ends.

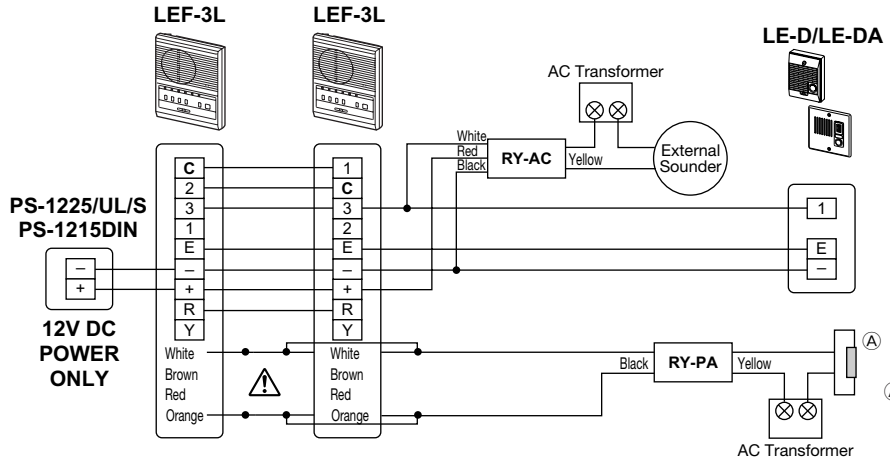
4 WIRING DIAGRAMS - Multiple Masters for Door Answering

LEF-3L System with External Signaling (RY-AC)

One door station with the ability to activate a separate doorbell

Shown with external signaling and door release relays

IMPORTANT: When using selective outputs, a separate relay and power source are required. Do not power external devices off of the system power supply.

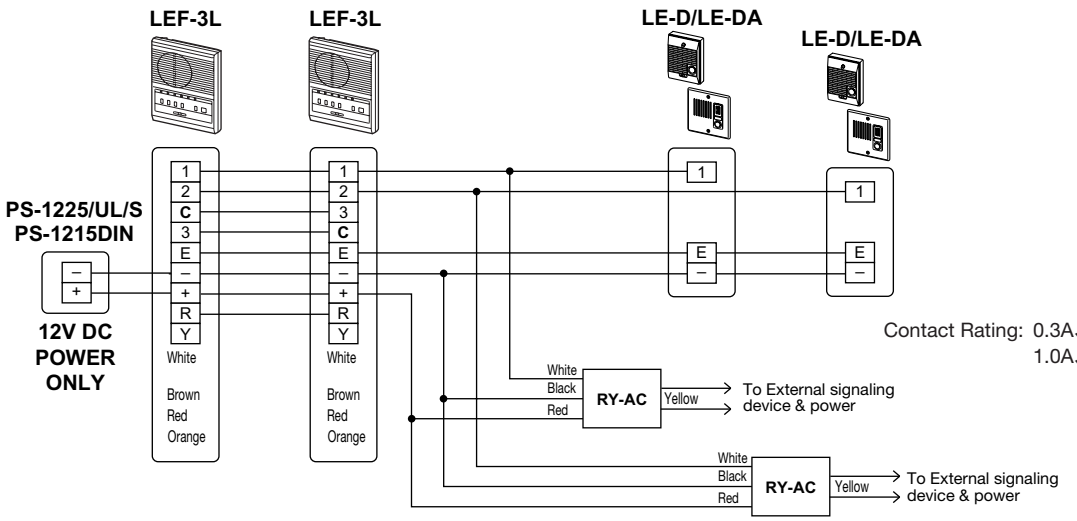


ⒶContact Rating: AC110V 1A
DC24V 1A

⚠ To prevent shorts, be sure to cut unused lead wires at the button and insulate the ends.

LEF-3L System with External Signaling (RY-AC)

Selective external signaling relay outputs for each door station call-in



Contact Rating: 0.3A、240V AC
1.0A、24V DC

⚠ To prevent shorts, be sure to cut unused lead wires at the button and insulate the ends.

5 OPERATIONS & SPECIFICATIONS

OPERATIONS:

■ Calling a master or sub:

1. Depress a station selector button 1 ~ 3.
2. Press the TALK button to speak, and release to listen to the reply.
3. To conclude, depress OFF button.

■ Receiving a call from a sub station:

1. Sub station calls in with tone and LED, which stays lit for 20 seconds.
2. Depress the lit station selector button.
3. Press the TALK button to speak, and release to listen.
4. Communication at the door station is hands free.
5. Depress OFF button when finished.

■ Receiving call from another master:

1. When a master calls to another master (without tone & LED), the responding master answers back handsfree.
2. The Occupied lamp will be on while the initiating master has a station selected.
3. Do not press any buttons on the master when responding to another master's call.

■ Door answering (from a master station only):

1. Audio door station calls in with an electronic call tone & LED, which stays lit for 20 seconds.
2. Depress the lit selector button, then press TALK to speak, release to listen.

■ Door release with “LOCK” button:

LEF-3L provides selective door release to multiple doors (One RY-PA for each door). When communication is established to a door station, press the Door release (0) button to release the corresponding door strike.

■ Camera Call-up feature:

If the "Camera Call-up" feature is included, the associated relay will provide a maintained closure as long as the station is selected at the master.

NOTE:

The LEF-3L does not have the "privacy feature", and also cannot send a call tone to another master or remote station in the system.

SPECIFICATIONS:

Power Source:	12V DC at master. Use PS-1225, 1225UL, 1225S (2.5A) or PS-1215 DIN (1.5A). Do not use AC power. Damage to the unit will result.
Current Consumption:	440mA
Communication Output:	800mW @ 20 ohms (receive); 500mW @ 20 ohms (transmit)
Communication:	Push-to-talk, release-to-listen at master station (LEF-3L). Hands free at sub station.
Calling:	Master to sub: By voice Sub to master: Call tone and LED
Wiring:	2 common plus 1 individual per sub, looped; or 3 conductors homerun from each sub. 2 conductors homerun from each sub in a single-master system only. Use Aiphone #822202 or #821802 (2 cond., 22 or 18AWG), or #822203 (3 cond. 22AWG) 12 conductors between master stations. Use Aiphone #822212. (North America only) Shielded cable is strongly recommended.

WIRING DISTANCE:

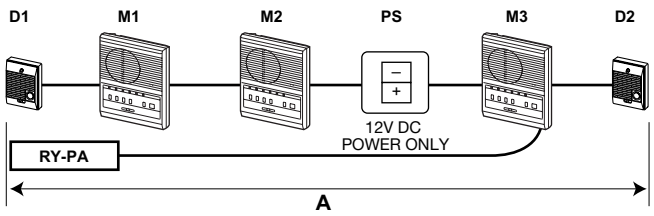


Figure 1

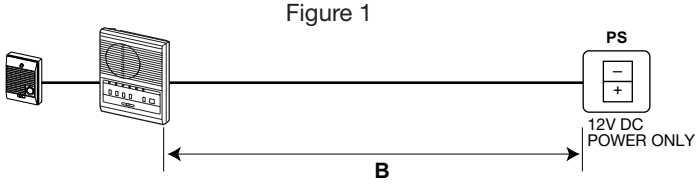


Figure 2

WIRING DISTANCE

Wire	Distance (MAX)	
	A	B
ϕ 1.0 mm (18AWG)	480 m (1575')	240 m (780')

Dimensions (HxWxD): 180H x 143W x 53.5D (mm). 7-1/16" x 5-5/8" x 2-1/8"
RY-PA Contact Rating: 1A, 110V AC or 24V DC

RESTRICTIONS

- Only one power supply can be used on one system.
- Up to 4 masters can be connected on the multiple masters configuration, or up to 3 masters on the intermix configuration.
- Use the door release button only when the TALK button is not pressed. (Don't operate the door release when talking.) Proper (relay) operation may not be guaranteed under the following conditions.
  - When a master is called from another sub or master station while talking (Including when the Call tone is sounding)
  - When a master is called from another master while the OCCUPIED lamp is on

6 TROUBLESHOOTING GUIDE

ENTRY #	PROBLEM	POSSIBLE CAUSE	SOLUTION
1	Door station does not call in (no call tone or LED light).	Missing jumpers	Are there 2 or 3 conductors run to the door station? If 2 wires, jumper must remain attached between E and — at both the door station and the master station. Replace jumper. In a multi-master system, the E / — jumper should be removed and 3 wires should be connected.
2	Door station does not call in (no call tone or LED light) -- 3-wire connection.	Missing connection of — terminal.	If communication works, check connection between — terminal of door station and master. Test call-in at master station by touching a jumper wire between # and — terminal of master. If this rings the tone and lights the light, the — wire from the door station is not connected properly.
3	Door station does not call in (no call tone or LED light) -- 3-wire connection.	Mis-wiring of 1 and E terminals.	Check that the 1 and E wire are not reversed. If they are, communication will work but call-in will not.
4	No communication to door station.	Mis-wiring of E terminal.	Communication is between the 1 and E terminal of the door station to a # and E terminal of the master station. If call-in works, check the E wire for continuity. Check the 1 and E wires at the sub to ensure that they are not reversed.

6 TROUBLESHOOTING GUIDE (Cont.)

ENTRY #	PROBLEM	POSSIBLE CAUSE	SOLUTION
5	No master-to-master communication.	C terminals mis-wired between masters.	Communication between masters is carried on the # wire of the calling master to the C terminal of the receiving master. Verify that the C terminal of the master that is being called is actually wired to the #terminal that is being selected on the calling master.
6	LEF master has no communication or tone, but LED lights work.	Wrong power supply is being used.	The LED lights will operate with a power source from 6VDC - 24VDC. The amplifier in the LEF unit will only work when the system is supplied 12VDC. Proper power supply is the PS-1225/UL/S, or PS-1215 DIN.
7	Feedback when the volume control is turned up over halfway.	E / — jumpers attached in a multi-master system.	Remove E / — jumpers on masters and door stations in the system, provided there are 3 wires to the sub(s). If the sub only has 2 wires in a multi-master system, the jumper must remain in place for the door call-in to work. In this case, the side effect is the feedback problem when the audio volume is turned up. The only alternative is to run the proper wire to the door station(s) and remove all of the jumpers.
8	New installation has AC buzz, noise, or hum in system.	Too close to AC and/or incorrect wire was used.	If the units are too close to an AC source such as AC wiring or dimmer switches, move the intercom at least one stud space away from the AC source. Other precautions include using shielded cable. If shielded wire was used and there is still AC noise, tie all the shields together and ground to an earth ground or negative on the power supply. If more than one jacketed cable was used between masters, make sure the # terminals, C terminal, and the E terminals are all in the same jacketed cable. If multiple cables were used, include an E wire in each cable that carries a station number wire in it.
9	Door release does not work.	Miswire or lack of RY-PA relays.	Check the (WHITE) wire coming out of the PC board for voltage. When depressing the Door release (⊸0) button, 12VDC is present across (WHITE) and —, which activates the relay. Ensure that the (BLACK) wires of the RY-PA are connected to (WHITE) and either the (BROWN), (RED), or (ORANGE) wire for selective door release (which provides selective ground when the corresponding channel is selected).
10	No call tone between masters. No Privacy feature on LEF-3L.	Features not available	The LEF-3L unit does not have the PRIVACY feature or the ability to send a call tone to another master station (as with the standard LEF-3). This function is removed to allow the switch to be used for door release instead of privacy.
11	Can't release the door from the 2nd (additional masters)	Wiring not connected properly.	If door release works from the first master but not another(s), verify that selective door release wires are connected between masters. ((WHITE), (BROWN), (RED), (ORANGE)). RY-PA's are only required at one master.
12	External Signaling device doesn't activate	RY-AC mis-wired	Make sure that the WHITE wire of the RY-AC is connected to the # terminal that is to be activating the relay, and that (RED) and (BLACK) are connected to + and —, respectively.

WARRANTY

Aiphone warrants its products to be free from defects of material and workmanship under normal use and service for a period of one year after delivery to the ultimate user and will repair free of charge or replace at no charge, should it become defective upon which examination shall disclose to be defective and under warranty. Aiphone reserves unto itself the sole right to make the final decision whether there is a defect in materials and/or workmanship; and whether or not the product is within the warranty.

This warranty shall not apply to any Aiphone product which has been subject to misuse, neglect, accident, or to use in violation of instructions furnished, nor extended to units which have been repaired or altered outside of the factory. This warranty does not cover batteries or damage caused by batteries used in connection with the product.

This warranty covers bench repairs only, and any repairs must be made at the shop or place designated in writing by Aiphone. Aiphone will not be responsible for any costs incurred involving on site service calls.

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