

# AIPHONE


Communication Systems  
**GENERAL LINE CATALOG 2010**






# C o n t e n t s

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VIDEO ENTRY SECURITY



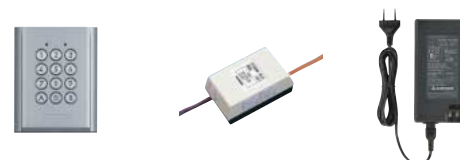
AUDIO ENTRY SECURITY



MULTI-UNIT ENTRY SECURITY



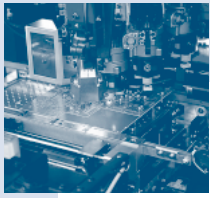
COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM



ACCESS CONTROL, ACCESSORIES & POWER SUPPLIES

COMMUNICATION DISTANCE & INDEX





# AIPHONE

## Communication Systems for business, home and industry

### Established In 1948

Aiphone has become the most respected and reliable brand of communication systems in the world. With headquarters in Nagoya and manufacturing in Toyota City, Central Japan, we export to over 60 countries. We expand ourselves along with a North American marketing, sales and distribution center near Seattle, Washington, and an European sales and distribution center in Lisses-Evry, France.

### Systems For Every Application

Aiphone products range from simple do-it-yourself door answering units to sophisticated video entry security systems, complex microprocessor-based commercial systems, and luxury condo/apartment security/communication systems. They are unrivaled in design simplicity, technical excellence and reliability. With over 30 standard systems, and additional manufacturing by special order, we can create a system for virtually any intercom application.

### Designed To Last

Every Aiphone system is the result of painstaking attention to detail: contemporary European style design, the finest quality hardware and circuitry, engineered, built and 100% pre-tested for sustained trouble-free service.



**AIPHONE CO., LTD.**  
in Japan Headquarters



**Toyota factory**



## ISO 9001

Aiphone is the first intercom manufacturer worldwide to receive ISO 9001 certification, and the only one selling in North America. An agency representing the International Standards Organization (ISO), headquartered in Geneva, Switzerland, graded Aiphone against guidelines for design and development, production, and product inspection and testing. ISO 9001 standards provide an immediate recognition of product quality almost anywhere in the world.



**ISO 9001 Certified**  
JQA-0291  
**AIPHONE CO., LTD.**

## Winner Of The Deming Prize

Aiphone is the first and only intercom manufacturer to win the Deming Prize, the highest international award for quality control. Named in honor of Dr. W. Edwards Deming, the award honors firms worldwide which advance and maintain manufacturing quality.



**Deming Prize**

## Acquisition of ISO 14001

ISO's Environmental Standards are a series of voluntary standards and guideline reference documents which include environmental management systems, eco-labeling, environmental auditing, life cycle assessment, environmental performance evaluation, and environmental aspects in products standards. In early 1998, our management team determined to acquire ISO-14001 approval as a company-wide project, and working committee was established at the same time. Since then, with our ongoing efforts and practice about environmental management standards, we have succeeded to acquire the approval.

Aiphone excludes the use of prohibited material from the product according to RoHS directive (2002/95/EC). Therefore, as of July 1, 2006, all the Aiphone products imported in EU will be fully complied with the RoHS directive.



**ISO 14001 Certified**  
JQA-EM0453  
Headquarters section  
Toyota Factory  
Taiho Site  
**AIPHONE CO., LTD.**



**AIPHONE CORPORATION**  
in USA



**AIPHONE S.A.S.**  
in France







# ENVIRONMENTAL REPORT

**We will contribute to building a sustainable society while cultivating communications with a wide spectrum of our stakeholders.**

## Basic Environmental Philosophy

Revised October 1, 2005

Based on our business philosophy of "Be Responsible for your job and don't cause of problems for others," we carry out our activities while harmonizing conservation of the global environment with our business operations.

## Environmental Policy

The AIPHONE group aspires to be enterprises capable of making contributions to society by using communication and security technologies, conducting our environmental activities as follows:

- (1) We will strive to minimize environmental loads to conserve the global environment in our activities of developing, producing, selling, and servicing our products.
- (2) We will make our goals and objectives clear in our business activities, continuously evaluating the following items and thus improving them:
  - a) We will aim to become a recycling society and make efforts to promote the 3R's (Reduce, Reuse, and Recycle) and minimize waste.
  - b) We will not use harmful substances that cause environmental contamination.
  - c) We will strive to conserve energy to prevent global warming.
- (3) We will conform to environment-related laws, regulations, and conventions while establishing voluntary standards to conserve the environment.
- (4) Placing great value on communication, we will promote the manufacture of products friendly to both humans and the environment.
- (5) We will conduct environmental audits in an effort to maintain and improve our environment management system.
- (6) We will make our environmental policy thoroughly known to our employees and all those who work together with us.
- (7) We will publicize this environmental policy to the general public.



**Certificate of acquisition of  
ISO 14001 accreditation**

This report is also posted on our website:  
**<http://www.aiphone.net>**





**NEW**

## Hands-free Two-Wire Electric Lock Door Phone

### DB-1MD / DB-1SD DB Series

➔ P.23, 57

Easy to install and simple to use, the DB Series protects private homes and apartments.  
For an ideal audio door entry solution, use Aiphone's DB Series !

DOOR  
**1**

ROOM  
**5**



**DA-1DS**  
Door station silver panel



**DB-1MD**  
Master station



**DB-1SD**  
Sub master station

**Only 27mm**



**NEW**

Available 2<sup>nd</sup> Quarter 2010

## IP color video intercom adaptor

### JKW-IP

➔ P.5, 6

Use the JKW-IP to connect a JK system to a local or, via the internet, a remote computer.  
The connected computer functions the same as a master monitor and can be used to answer calls, view and communicate with visitors and even release an electronic lock at an entry.

Connect up to 20 JK systems to a maximum of 10 computers to create the system that matches your security needs.

DOOR  
**1**

MASTER  
**1**

PC  
**10**

Max.20



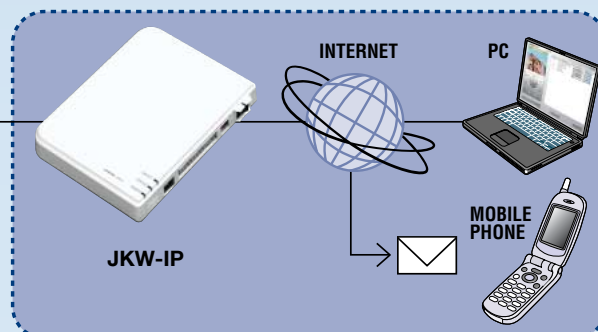
**JKW-IP**  
IP color video intercom adaptor



**JK-DV**



**JK-1MED**





# Wide and Zoom & PanTilt Hands-free Color Video Intercom

## DOOR 1 ROOM 2 JK-1MD/JK-1MED

### Features

- One door & two monitors (3-1/2 inch); room to room communication is available
- Streamlined & Thin design, only 27 mm thickness
- Vandal resistant video door stations are available
- Optional audio sub master station (JK-1SD)
- Total hands-free communication, auto-voice actuation

#### Door station



**JK-DV**  
Wide and Zoom & PanTilt Vandal-resistant video door station, surface mount  
or



**JK-DVF**  
Wide and Zoom & PanTilt Vandal-resistant video door station flush mount



**JK-DA**  
Wide and Zoom & PanTilt video door station, surface mount

**Power supply PS-1820S PS-1820UL PS-1820 → P.104**

#### Master station



**Standard**  
Non-Picture memory

**JK-1MD**  
Master station w/Wide and Zoom & PanTilt color monitor

or



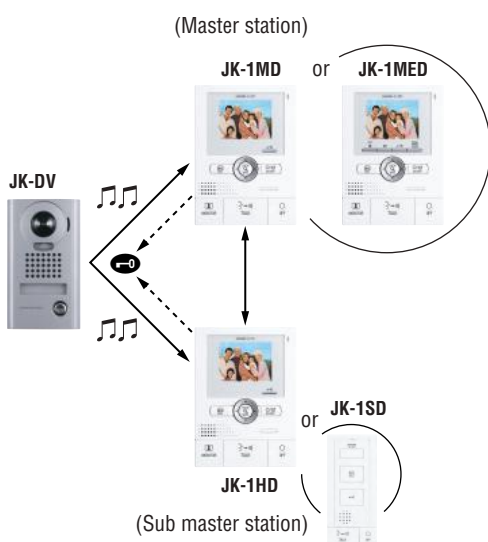
**Picture memory**

**JK-1MED**  
Master station w/Wide and Zoom & PanTilt color monitor & built-in picture memory.



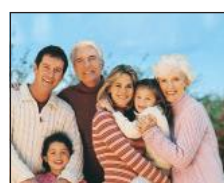
**IER-2**  
Call extension  
→ P.101

### Communication network



### PANORAMIC WIDE View

Everyone at the entrance can be identified by image from JK wide angle camera. The field of vision can be controlled on WIDE mode or ZOOM mode from inside.



WIDE IMAGE



ZOOM IMAGE

### Zoom & PanTilt

By pressing PanTilt button, the image of the PanTilt video door station can be adjusted to a more visible position from inside on the zoom mode.



The design and specifications are subject to change without notice for improvement.

\*The screen images are simulated graphics. They are images to express functions, and are different from the real one. Please understand it beforehand.



- Talk LED lights in red while speaking
- Visual monitoring with audio for 1 minute
- Built-in picture memory; Record visitor both automatically & manually (JK-1MED only)
- Instant voice call-in with image
- Press-to-talk operation available
- Press-to-talk restriction
- White LED illumination turns on in low-light conditions

- Backlight compensation by "ADJUST" button
- Full color video in low light situations w/o external illumination
- PanTilt and Zoom & Wide camera control
- Camera angle preset
- External input
- Option - Option button, press-to-talk setting, video signal output

### Sub master station



**JK-1HD**  
Sub master station  
w/color monitor

or



**JK-1SD**  
Audio sub master  
station

### Boxed sets



#### Standard

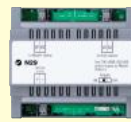
**JKS-1AD:** JK-1MD, JK-DA  
**JKS-1ADV:** JK-1MD, JK-DV  
**JKS-1ADF:** JK-1MD, JK-DVF

#### Picture memory

**JKS-1AED:** JK-1MED, JK-DA  
**JKS-1AEDV:** JK-1MED, JK-DV  
**JKS-1AEDF:** JK-1MED, JK-DVF

Add appropriate power supply

### Lineup



**JKW-BA**  
Long distance adaptor  
→ P.4  
\*Max. 300m away from  
Master/sub to Door.



**EL-12S**  
Electric door strike  
→ P.101



**JKW-IP**  
IP color video  
intercom adaptor  
→ P.5



**JK-DVF-AC**  
Vandal-resistant color video door  
station with access control keypad

#### Access Control → P.99



**AC-10S**  
Access control  
keypad,  
surface mount

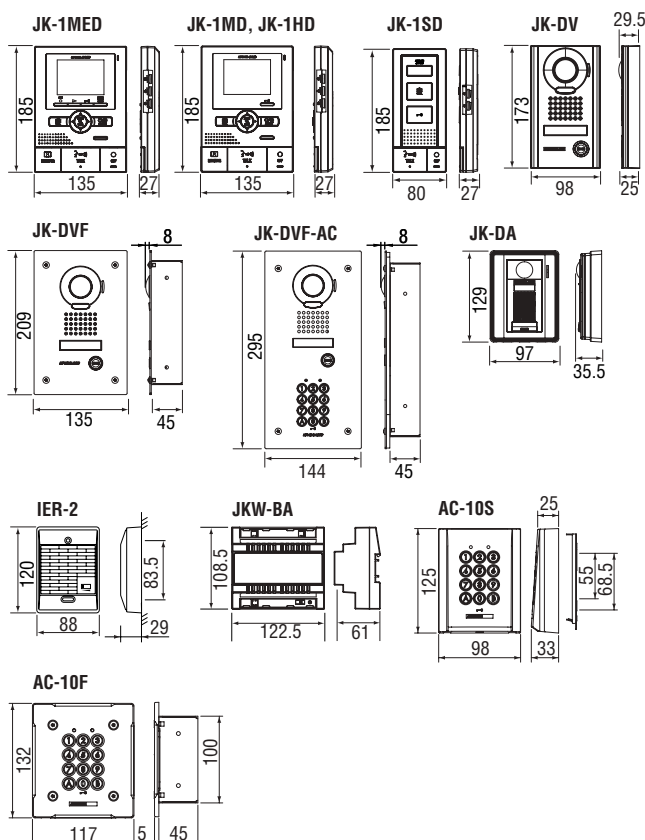


**AC-10F**  
Access control  
keypad,  
flush mount



**JK-DV + AC-10S**

### Unit dimensions



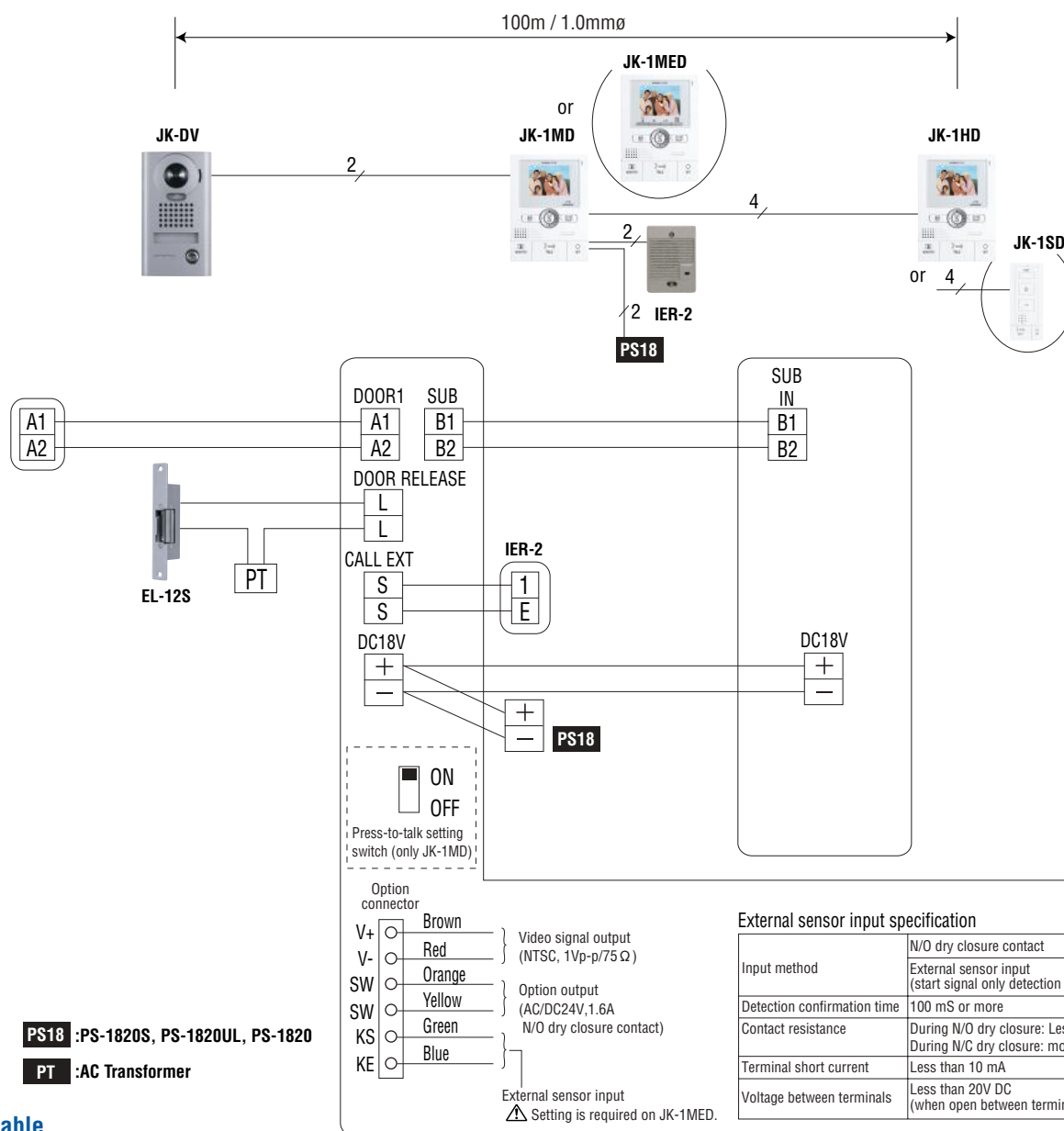
### Specifications

|                 |   |
|-----------------|---|
| Power source    | 18V DC  |
| Power supply    | PS-1820S, PS-1820UL, PS-1820  |
| Consumption     | Max. 400mA (JK-1MED, JK-1MD). Max. 200mA (JK-1HD).<br>Max. 120mA (JK-1SD)   |
| Calling         | Chime. Image & audio, approx. 45 sec.   |
| Communication   | Approx. 1 min.<br>AUTOMATIC (Hands-free); To activate, momentarily<br>press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate,<br>press TALK button for 1 sec. or more. |
| Video monitor   | 3.5 inch direct-view TFT color LCD.   |
| Scanning line   | 525 lines   |
| Video output    | NTSC, 1Vp-p/75Ω   |
| Night viewing   | Up to 50cm from camera, with white LED projected,<br>background beyond 50cm cannot be seen.   |
| Door release    | 24V AC/DC, 500mA (N/O dry closure contact)  |
| Option output   | 24V AC/DC, 1.6A (N/O dry closure contact)   |
| Wiring          | Door to master: 2-cond., mid cap, solid, non-shielded.<br>Master to sub: 4-cond., mid cap, solid, non-shielded.   |
| Wiring distance | Master/sub to door: 50m (0.65mmø) 100m (1.0mmø)<br>Master to IER-2: 75m (0.65mmø) 150m (1.0mmø)   |



# Wide and Zoom & PanTilt Hands-free Color Video Intercom

## Wiring



## Cable

Vinyl jacketed, PE(polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.

## Setting up (JK-1MED only)

On JK-1MED, clear screen displays & Indications realize your easy setting up!



| Setting name                      |                      | Available setting  |
|-----------------------------------|----------------------|--|
| Time                              |                      | 2008 01/01/ 00:00  |
| Language                          |                      | English, French, Italian, Dutch, Spanish                                 |
| Door station chime tone           |                      | ♪ 1 (Tone 1) ♪ 2 (Tone 2) ♪ 3 (Tone 3) ♪ 4 (Tone 4)                      |
| Communication time                |                      | 1 min. 2 min. 3 min. 5 min.  |
| Automatic night volume adjustment |                      | Enable Disable   |
| External input                    | Detection            | N/O N/C Disable  |
|                                   | Notification at door | OFF OFF ON   |
|                                   | Sound time           | 30 sec. Continuous Continuous  |
| Press-to-talk setting             |                      | Enable Disable   |
| Recording                         | Picture              | • All saved pictures are erased.   |
|                                   | Screen               | • Zoom x 3, Wide x 3<br>• Wide x 3, Zoom x 3<br>• Zoom x 6<br>• Wide x 6 |

※ are initial views

⚠ Setting operations are made by pressing buttons under the screen.

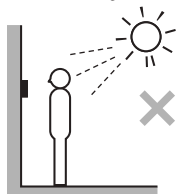


## Mounting locations

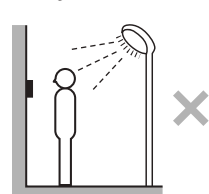
### • Video door station

Do not install a video door station in any of the following locations where lighting or the ambient environment could impact the display on the video master station due to the characteristics of the door station's camera.

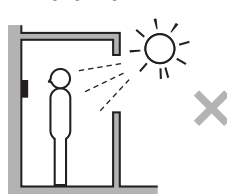
Locations subject to direct sunlight



Under street lights or door lights

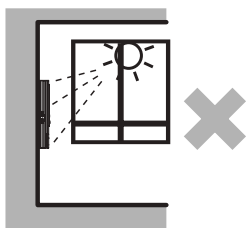


Other locations subject to strong lighting conditions

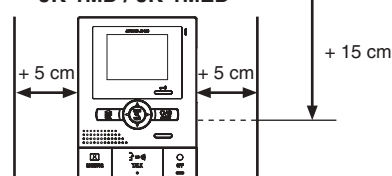


### • Monitor station

1. Install the master monitor station and sub monitor station in places where the screens are not exposed to direct sunlight.
2. The master monitor station and sub monitor station have switches on both sides. Allow at least 5 cm of open space on either side.
3. Allow 15 cm or more of vertical open space from the center of the mounting bracket in order to mount the master monitor station and sub monitor station.



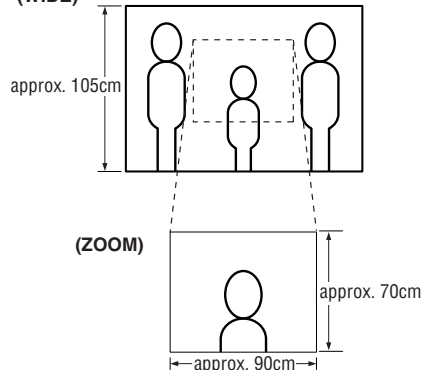
JK-1MD / JK-1MED



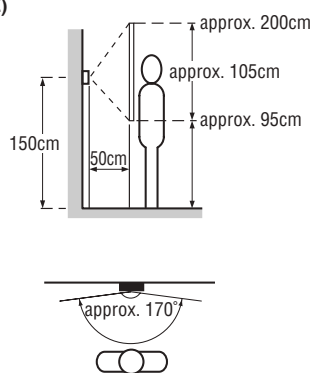
## Image view area

JK-DA, JK-DV, JK-DVF

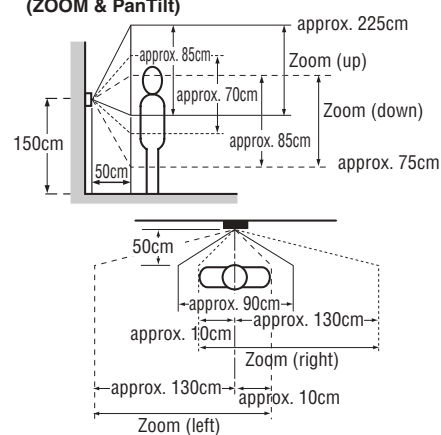
(WIDE)



(WIDE)



(ZOOM & PanTilt)



## Long distance adaptor for JK series

### Features

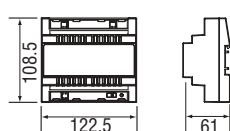
- When JK series color video door station is more than 100m to max. 300m away.

### Used for

JK-1MD, JK-1MED

### Unit dimensions

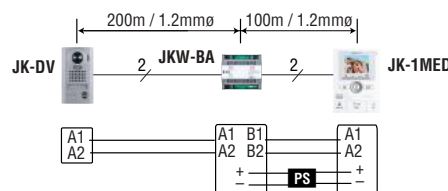
JKW-BA



JKW-BA

Long distance adaptor

### Wiring



### Cable

1.0mm² to 1.2mm². Vinyl jacketed, PE (polyethylene) insulation cable.

### Specifications

|                     |   |
|---------------------|---|
| Power source        | 18VDC, PS-1820S, PS-1820UL, PS-1820 of system or separate   |
| Current consumption | 95mA  |
| Wiring              | 2 parallel wires to ea. door & master.  |
| Distance            | JK door~JKW-BA 100m~200m(1.2mm²)<br>JKW-BA~JK master/JK-1HD/JK-1SD 100m(1.2mm²)<br>JKW-BA~PS 100m(1.2mm²) |

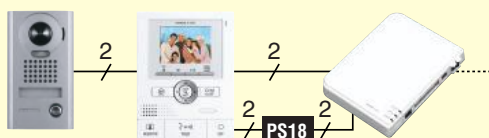


## DOOR 1 MASTER 1 - 10 JKW-IP

Max.20



**JKW-IP**  
IP color video intercom adaptor



**JK series** → P.1

**Power supply**  
PS-1820S  
PS-1820UL  
PS-1820 → P.104

### Features

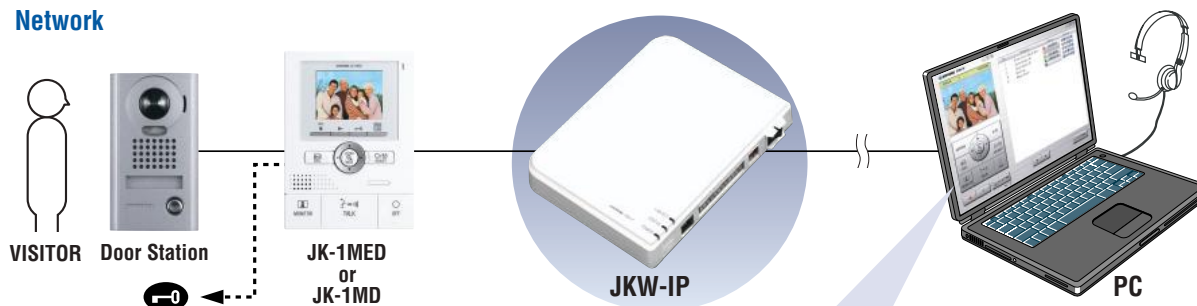
- Use of local area networks (LANs) and wide area networks (Internet) allow PCs to be used as a JK master unit
- Combine up to 20 JK master/Door systems
- 10 PCs can communicate to 20 JK systems
- Allow a PC to function as a JK master
- Connected PC(s) control PanTilt, zoom and wide views of entryway
- Images or movies from entranceways can be recorded and played back at a PC
- See and speak with visitors from any door/master system
- Monitor Specific entries
- Selective Door release Activation
- Use headset (not included) for communication
- A still picture or video of visitor can be recorded
- E-mail can be automatically sent to 10 e-mail addresses when called from door station
- Audio recording with manual video recording
- Communicate to and from JK masters
- 4 Sensor Inputs activate alert on PC(s)
- A single port can be used for multi-purpose external input

### Notice

- It may not be possible to use this product with certain network environments or PCs.
- To use this product via the Internet, a separate broadband connection and a router with a fixed IP address is required.
- To ensure proper function only use with approved routers. Refer our homepage for a list of approved routers which allow proper operations.
- Maintaining security at the computer(s) connected to the JKW-IP is the responsibility of the customer. Aiphone assumes no responsibility for any losses incurred as a result of improper PC, firewall or other security.
- It is recommended that you use a 100BASE-TX wired LAN as the network.

### Main features

#### Network



### Application

A user friendly interface contains controls that match those on a JK-1MED. This allows the PC to be controlled in the exact manner as a master monitor.

- Backlight & Night Sensitivity Adjustment
- Visual Monitoring with audio
- Visual & Audio recording

#### PC monitor



#### Wide and Zoom & PanTilt control from PC



Wide and Zoom  
& PanTilt  
button



##### Wide and Zoom



WIDE IMAGE

ZOOM IMAGE

##### PanTilt on Zoom mode



Door release  
button

Unlock the door after verifying  
visitor identity



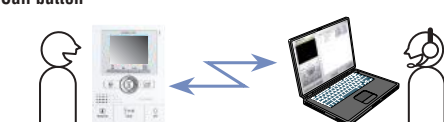
Talk button

Video & Audio communication  
with entrance side by PC



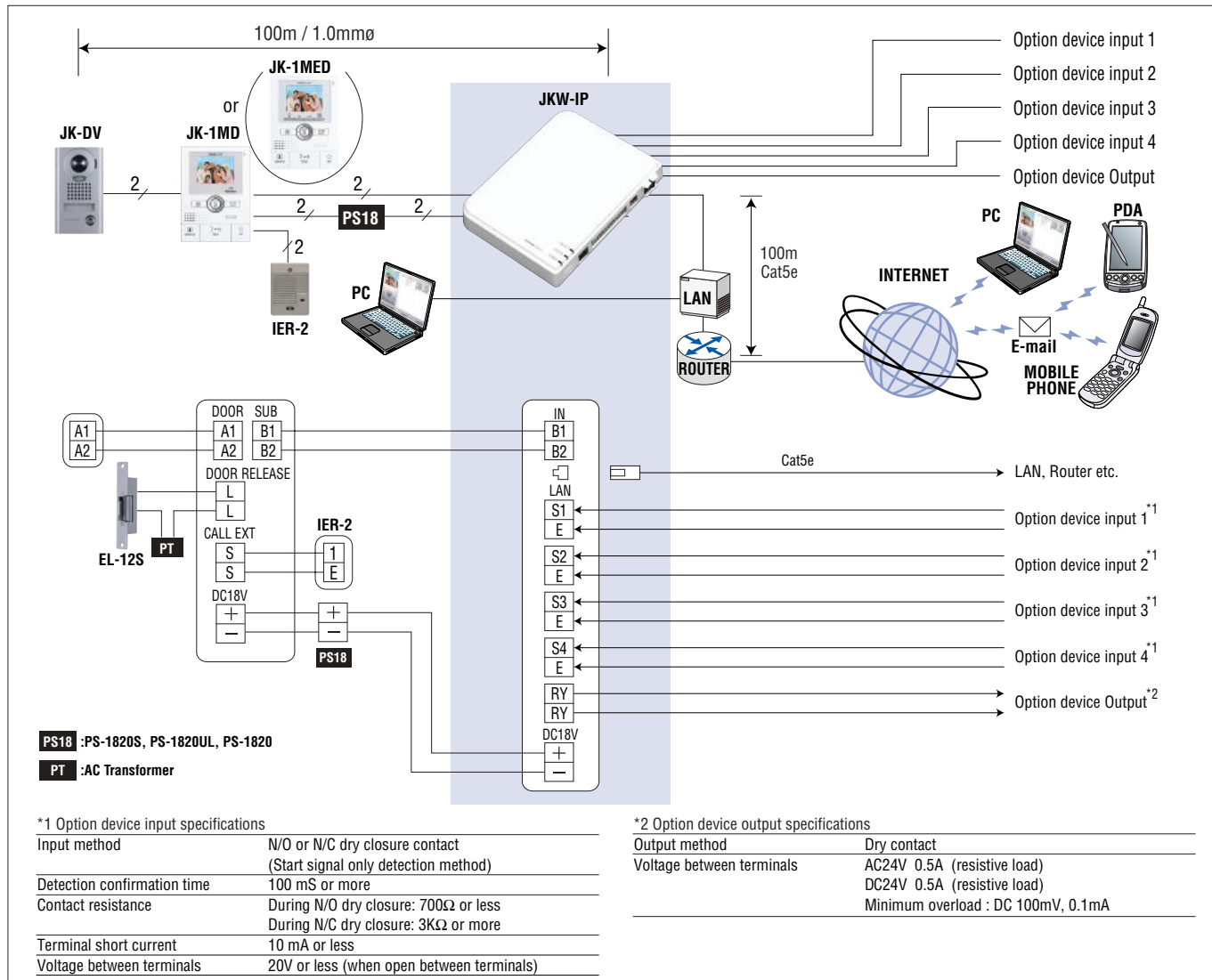
Call button

Room to room communication  
with master station (JK-1MED or JK-1MD)





## Wiring



Technical drawing of the JKW-IP device. The front view shows a rectangular unit with a width of 200 mm and a height of 150 mm. The side view shows a depth of 35.5 mm. The device has a small protrusion on the bottom edge.

|                         |  |
|-------------------------|--|
| Power source            | 18V DC   |
| Power supply            | PS-1820S, PS-1820UL, PS-1820   |
| Consumption             | Max. 200mA   |
| OS                      | Windows XP Home/Professional(SP3)<br>Windows Vista Ultimate/Home/Business/Enterprise(SP1)  |
| PC System Configuration | Processor: 800MHz or more<br>System memory: 1GB RAM or more<br>Hard disk drive: 10MB or more (Separate space for movie recording will also be required)<br>Sound card: 8-bit full duplex, Direct Sound compatible<br>Display: 1024 x 786 or higher<br>Runtime: Microsoft® .NET Framework 2.0 or later<br>Network: Wired 100BASE-TX recommended |
| Protocol                | TCP/IPv4, UDP/IPv4, SIP, etc   |
| Network bandwidth       | 320k~8Mbps   |
| Language                | English, French, Spanish, German, Dutch, Italian   |



# Hands-free Color Video Intercom

## DOOR 1 ROOM 1+1 JF-1MD

### Features

- One door & two monitors (3.5 inch); room to room communication is not available
- Total hands-free communication, auto-voice actuation
- Streamlined & Thin design, only 27 mm thickness
- Vandal resistant video door stations are available
- White LED illumination turns on in low-light conditions

#### Door station



**JF-DV**  
Vandal-resistant video door station, surface mount  
or



**JF-DVF**  
Vandal-resistant video door station, flush mount

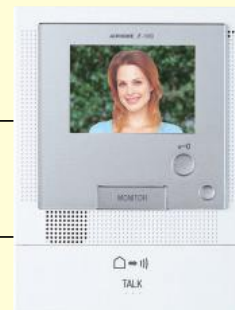
or



**JF-DA**  
Standard video door station

Power supply PS-1820S PS-1820UL PS-1820 → P.104

#### Master station



**JF-1MD**  
Master station w/color monitor

PS18



**IER-2**  
Call extension  
→ P.101

#### Access Control → P.99



**AC-10S**  
Access control keypad, surface mount

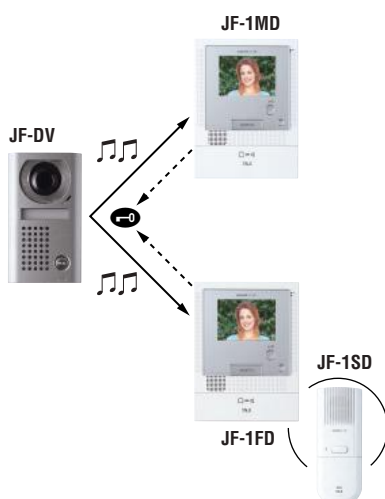


**AC-10F**  
Access control keypad, flush mount



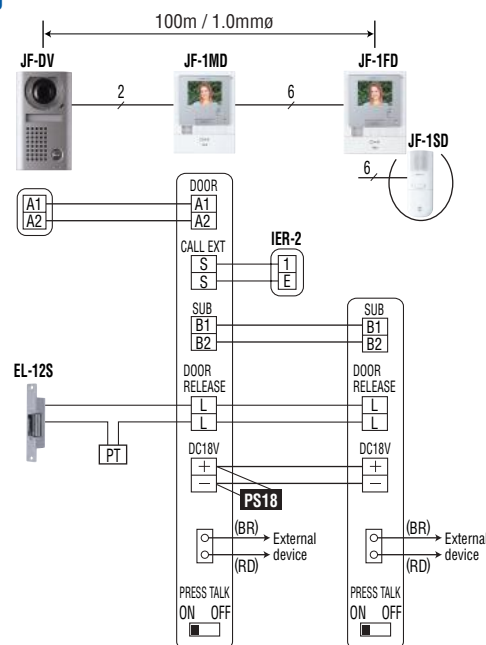
**JF-DV + AC-10S**

### Communication network



Room-to-room communication is not available.

### Wiring



BR: Brown RD: Red PS18: PS-1820/S/UL PT: AC Transformer

### Cable

Vinyl jacketed, PE(polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.



- Instant voice call-in with image
- Visual monitoring with audio for 1 minute
- Press-to-talk operation available
- Talk LED lights in red while speaking
- Optional audio sub station (JF-1SD)
- Option - Option button, press-to-talk setting

### Sub station



**JF-1FD**  
Sub station  
w/color monitor

or



**JF-1SD**  
Audio sub  
station

### Boxed sets



**JFS-1AD:** JF-1MD, JF-DA  
**JFS-1ADV:** JF-1MD, JF-DV  
**JFS-1ADF:** JF-1MD, JF-DVF

Add appropriate power supply

### Lineup



**JBW-BA**  
Long distance adaptor  
→ P.21  
\*Max. 300m away from  
Master/sub to Door.



**KAW-D**  
30° angled box  
→ P.22

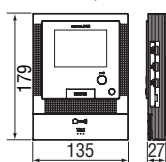
**JBW-D**  
15° angled box



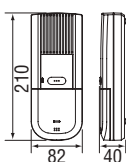
**EL-12S**  
Electric door strike  
→ P.101

### Unit dimensions

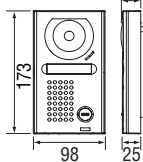
**JF-1MD, JF-1FD**



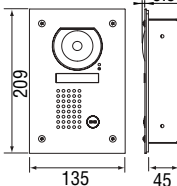
**JF-1SD**



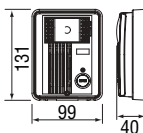
**JF-DV**



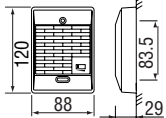
**JF-DVF**



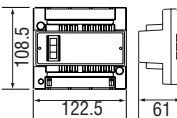
**JF-DA**



**IER-2**

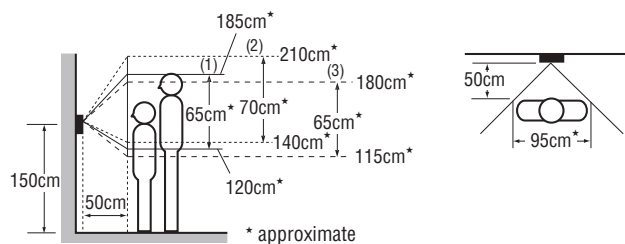


**JBW-BA**



### Image view area

JF-DA, JF-DV, JF-DVF



\* approximate

(1) Initial horizontal view (2), (3) When camera is turned up or down (JF-DA only)

### Specifications (JF-1MD)

|                 |   |
|-----------------|---|
| Power source    | 18V DC  |
| Power supply    | PS-1820S, PS-1820UL, PS-1820  |
| Consumption     | Max. 450mA (JF-1MD). Max. 300mA (JF-1FD)  |
| Calling         | Chime. Image & audio, approx. 45 sec.   |
| Communication   | Approx. 1 min.<br>AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 1 sec. or more. |
| Video monitor   | 3.5 inch direct-view TFT color LCD.   |
| Scanning line   | 525 lines   |
| Night viewing   | Up to 30cm from camera, with white LED projected, background beyond 30cm cannot be seen.  |
| Door release    | 24V AC/DC, 500mA (N/O dry closure contact)  |
| Option output   | 24V AC/DC less than 1.6A (N/O dry closure contact)  |
| Wiring          | Door to master: 2-cond., mid cap, solid, non-shielded.<br>Master to sub: 6-cond., mid cap, solid, non-shielded.   |
| Wiring distance | Master/Sub (farthest room station) to door:<br>50m (0.65mmø) 100m (1.0mmø)<br>Master to IER-2: 75m (0.65mmø) 150m (1.0mmø)  |



# Hands-free Color Video Intercom, Picture Memory

DOOR

2

ROOM

3

## JF-2MED

### Features

- Two doors & three monitors (3-1/2 inch)
- Total hands-free communication, auto-voice actuation
- Built-in picture memory; Record visitor both automatically & manually
- Voice memo; Internal short voice messages can be recorded and played back

#### Door station



**JF-DV**  
Vandal-resistant video door station, surface mount



**JF-DVF**  
Vandal-resistant video door station flush mount

or



**JF-DA**  
Standard video door station

or



**JF-D**  
Audio only door station

#### Master station



**JF-2MED**  
Master station w/color monitor and picture memory

4

**IER-2**  
Call extension  
→ P.101

#### Access Control → P.99



**AC-10S**  
Access control keypad, surface mount



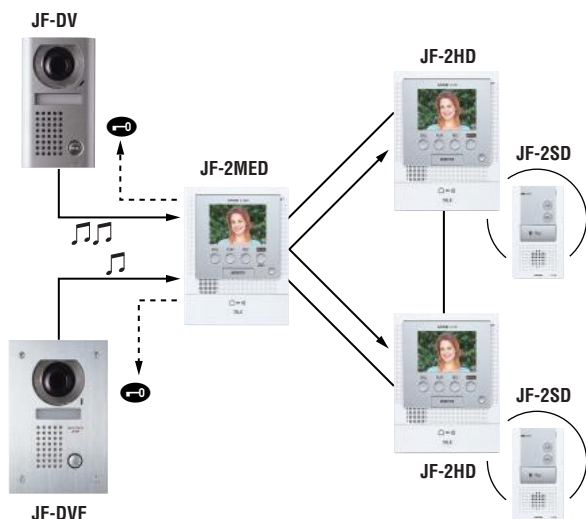
**AC-10F**  
Access control keypad, flush mount



**JF-DV + AC-10S**

Power supply PS-1820S PS-1820UL PS-1820 → P.104

### Communication network



Selective control of door release at communicating Door station.  
All-Call the inside stations by voice, then talk individually.

### Picture memory

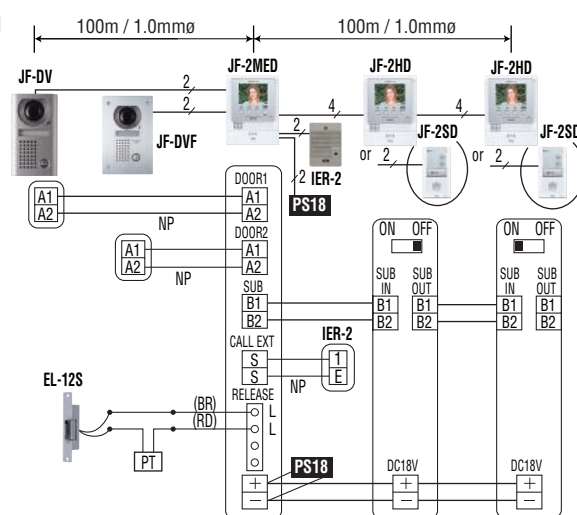


- Plays 8 shots continuously so that you can see them as a moving image.
- Pause and frame-by-frame play are also available.

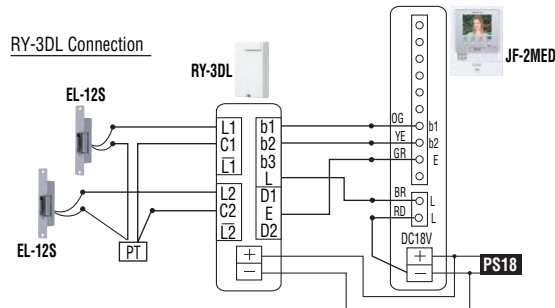
8 shots/picture



### Wiring



#### RY-3DL Connection



BR: Brown RD: Red OG: Orange YE: Yellow GR: Green

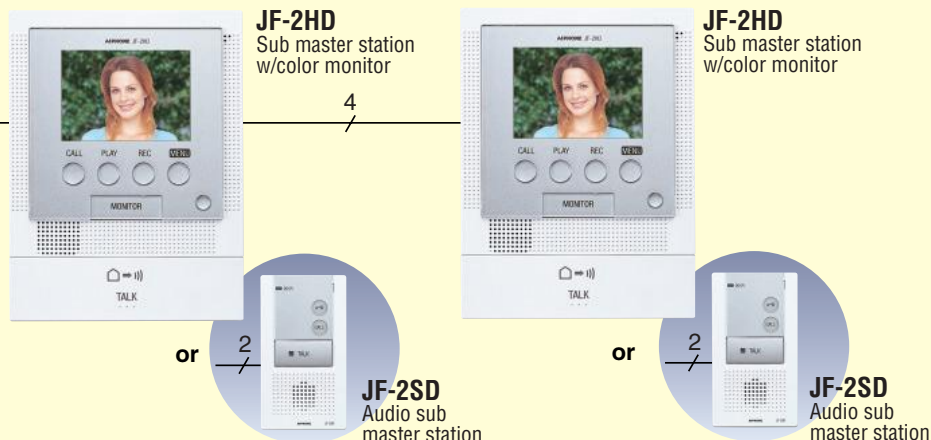
PS18: PS-1820/S/UL PT: AC Transformer



- Message for entrance; Outgoing messages can be recorded and sent out at the door station manually
- Streamlined & Thin design, only 32 mm thickness
- Vandal resistant video door stations are available
- White LED illumination turns on in low-light conditions
- Visual monitoring with audio for 1 minute
- External sensor connectable for notifying and pictograph on monitor
- Instant voice call-in with image

- Different chimes to indicate which door is calling
- Press-to-talk operation available
- All-Call for internal communication
- Transfer of door station call to other inside stations
- Selective door release control (with RY-3DL)
- Optional audio sub master station (JF-2SD)
- Audio door station in lieu of 2nd video door station
- Option - Option button, Video signal (NTSC) output, External talk switch, press-to-talk restriction

## Sub station



## Boxed sets



**JFS-2AED:** JF-2MED, JF-DA  
**JFS-2AEDV:** JF-2MED, JF-DV  
**JFS-2AEDF:** JF-2MED, JF-DVF

Add appropriate power supply

## Lineup



**RY-3DL**  
Door release adaptor  
→ P.21



**JBW-BA**  
Long distance adaptor  
→ P.21  
\*Max. 300m away from Master to Door

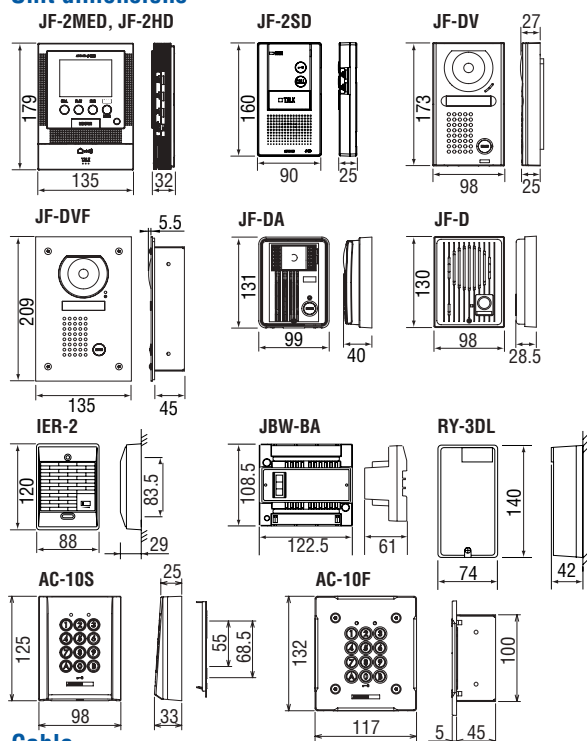


**KAW-D**  
30° angled box  
→ P.22



**EL-12S**  
Electric door strike  
→ P.101

## Unit dimensions

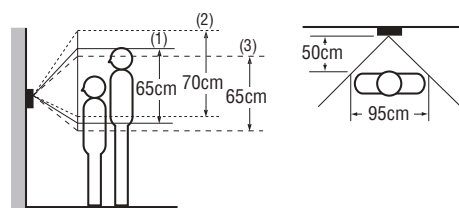


## Cable

Vinyl jacketed, PE(polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.

## Image view area

JF-DA, JF-DV, JF-DVF



(1) Initial horizontal view (2), (3) When camera is turned up or down (JF-DA only)

## Specifications (JF-2MED)

|                 |   |
|-----------------|---|
| Power source    | 18V DC  |
| Power supply    | PS-1820S, PS-1820UL, PS-1820  |
| Consumption     | Max. 400mA (JF-2MED). Max. 220mA (JF-2HD)   |
| Calling         | Chime. Image & audio, approx. 45 sec.   |
| Communication   | Approx. 1 min.<br>AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 1 sec. or more. |
| Video monitor   | 3-1/2 inch direct-view TFT color LCD.   |
| Scanning line   | 525 lines   |
| Night viewing   | Up to 30cm from camera, with white LED projected, background beyond 30cm cannot be seen.  |
| Door release    | 24V AC/DC, 500mA (N/O dry closure contact)  |
| Wiring          | Door to master: 2-cond., mid cap, solid, non-shielded.<br>Master to sub: 4-cond., mid cap, solid, non-shielded.   |
| Wiring distance | Master to door: 50m (0.65mmø) 100m (1.0mmø)<br>Master to farthest sub: 50m (0.65mmø) 100m (1.0mmø)<br>Master to IER-2: 75m (0.65mmø) 150m (1.0mmø)                                    |



# Hands-free Color Video Intercom, PanTilt, Picture Memory

DOOR

ROOM

2

3

## JA Series

### Features

- Two color PanTilt Camera door stations, three inside monitor stations (4 inch LCD)
- Motion-sensor camera (max.2)
- Built-in picture memory (JA-2MECD only)
- Surveillance mode SET through sensor-cameras. Activates monitor and internal alarming (& picture save in JA-2MECD)

#### Door station



**JA-DGC**  
PanTilt color video door station - semi-flush mount



**JA-DAC**  
PanTilt color video door station - surface mount

or



**JA-D**  
Audio only door station - surface mount



**JDW-C**  
Motion-sensor camera

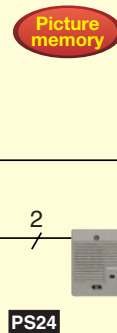


**JDW-C**  
Motion-sensor camera

#### Master station



**JA-2MECD**  
PanTilt color monitor master station, picture memory



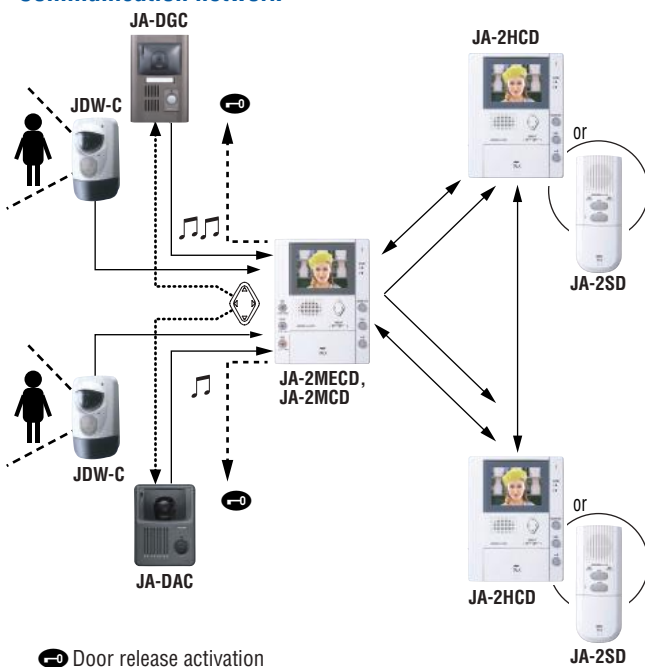
**JA-2MCD**  
PanTilt color monitor master station



**JA-2MCD**  
PanTilt color monitor master station

Power supply PS-2420S PS-2420UL PS-2420 → P.104

### Communication network



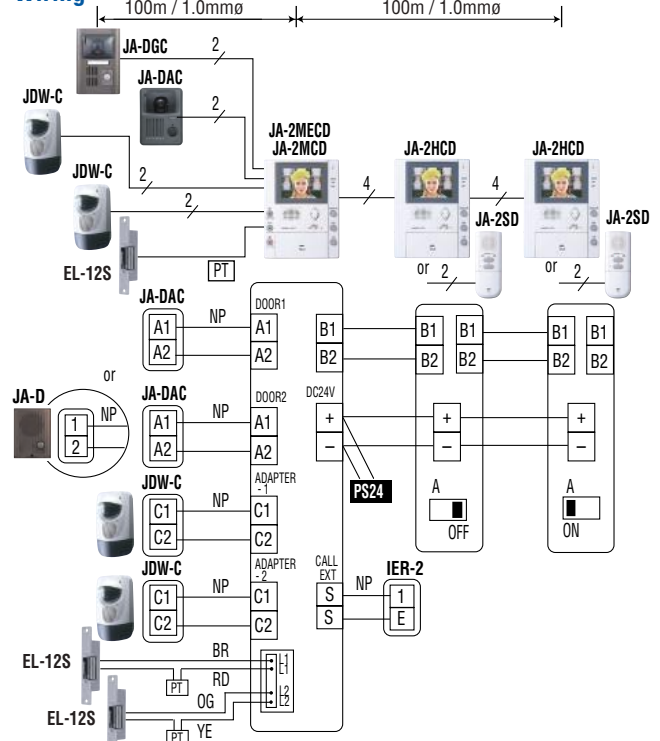
Door release activation

Hands-free voice-activated communication after TALK button is pressed.

### Cable

Vinyl jacketed, PE(polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.

### Wiring



Wiring for JA-2SD; Two wires only. + / - wires are not necessary.

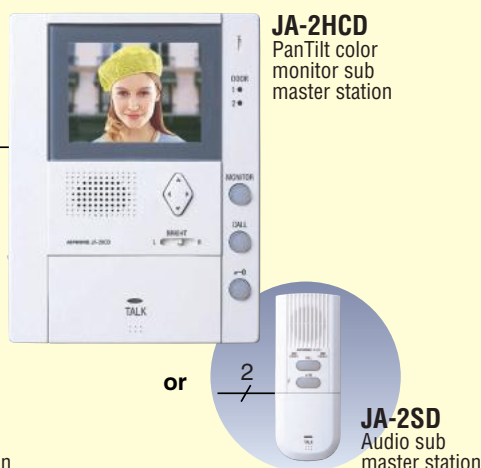
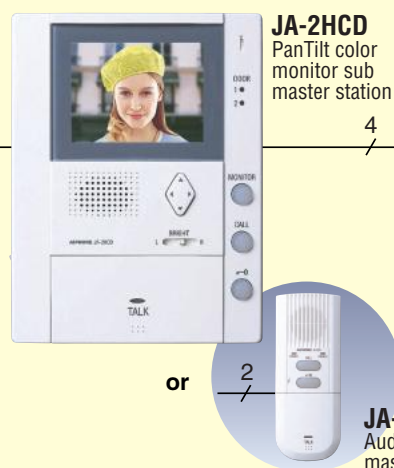
B1,B2: marked with SUB IN, SUB OUT PS24 :PS-2420/S/UL PT : AC transformer BR: Brown RD: Red OG: Orange YE: Yellow



- Total hands-free communication, auto-voice actuation
- Instant voice call-in with image
- Press-to-talk available
- White LED illuminator turns on in low-light conditions
- All Call for internal communication
- Transfer of door station call to other inside stations
- Optional video (JA-2HCD) or audio (JA-2SD) sub stations
- Audio door station in lieu of JA video door station

- Talk LED lights in red while speaking
- Visual monitoring with audio through all cameras
- Two door release contacts for selective control
- Options:
  - Foot talk switch
  - Manual Talk switch restriction
  - RY-3DL for large door releases locally available
  - Video output to video device (NTSC)

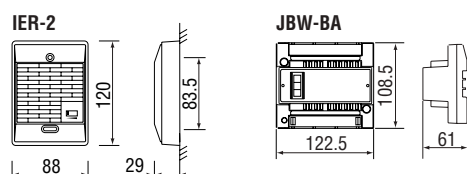
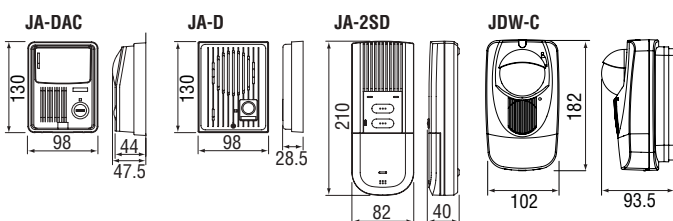
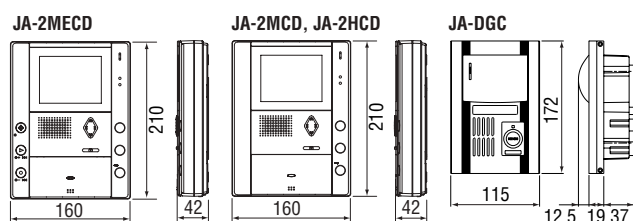
### Sub station



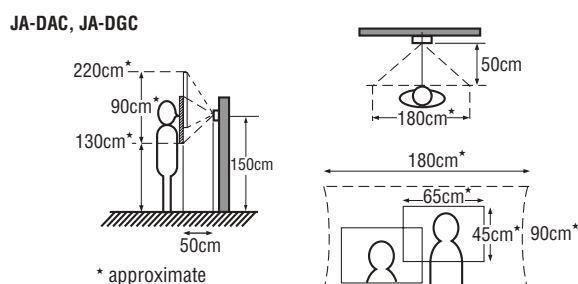
## Lineup



## Unit dimensions



## Image view area



Max. pan-and-tilt view area: 90cm Vert., 180cm Horiz. (approx.)

### Specifications (JA-2MECD, JA-2MCD, JA-2HCD, JA-2SD)

|                 |   |
|-----------------|---|
| Power source    | 24V DC  |
| Power supply    | PS-2420S, PS-2420UL, PS-2420  |
| Consumption     | Max. 750mA(JA-2MECD). Max. 680mA(JA-2MCD).<br>Max. 290mA(JA-2HCD). Max. 120mA(JA-2SD)   |
| Calling         | Chime. Image & audio, approx. 30 sec.   |
| Communication   | AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 2 sec. or until talk LED turns on.  |
| Video monitor   | 4 inch direct-view TFT color LCD.   |
| Scanning line   | 525 lines   |
| Night viewing   | White LED projected up to 30cm from camera.   |
| Door release    | 24V AC/DC, 500mA (dry closure contact L, L)   |
| Wiring          | Parallel, station to station(non-twisted, non- shielded).<br>Vinyl-jacket, PE insulation.   |
| Wiring distance | Master station ~ Door 50m(0.65mmø) 100m(1.0mmø)<br>Master station ~ Motion sensor camera 50m(0.65mmø) 100m(1.0mmø)<br>Master station ~ farthest sub 50m(0.65mmø) 100m(1.0mmø)<br>Master station ~ IER-2 50m(0.65mmø) 100m(1.0mmø) |



## Features

- Clear and bright image with color TFT LCD monitor and DSP video door station
- TILT camera control
- INSTANT ON audio & image of entry when called



## KU-DAT

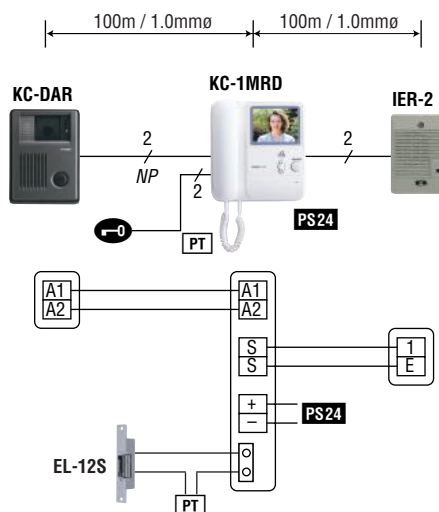
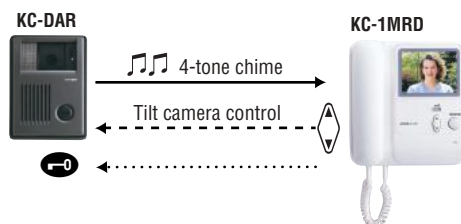
### Video door station



**KC-1MRD**  
Master station

**Power supply PS-2420S PS-2420UL PS-2420 → P.104**

## Wiring



- Run audio/video wires in a separate jacketed cable from door release wires.
- PS24** : PS-2420/S/UL   **PT** : AC transformer

Vinyl jacketed, PE(polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.



- Hands-free monitoring audio & image of door
- Video door station's white LED illumination automatically turns on in the darkness
- Locator LED backlight on CALL button



**IER-2**  
Call extension  
→ P.101

### Boxed sets



**KCS-1ARD:** KC-DAR & KC-1MRD  
add appropriate power supply

### Lineup



**KC-32EU**  
Picture memory  
unit  
→ P.21



**KAW-D**  
30° angled box  
→ P.22



**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**EL-12S**  
Electric door  
strike  
→ P.101



**KA-DGR PANEL**  
Stainless steel  
housing  
for KC-DAR



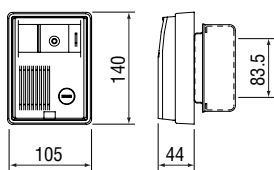
**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99



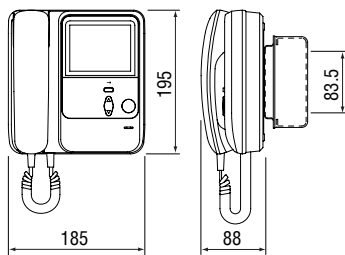
**JBW-BA**  
Long distance  
adaptor  
→ P.21

### Unit dimensions

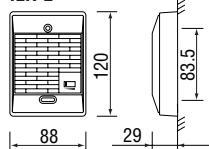
**KC-DAR**



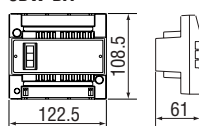
**KC-1MRD**



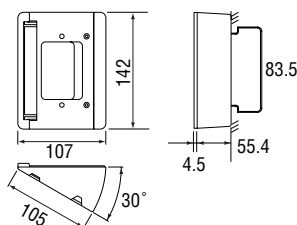
**IER-2**



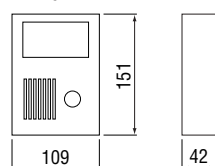
**JBW-BA**



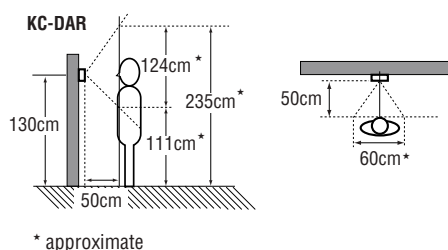
**KAW-D**



**KA-DGR PANEL**



### Image view area



\* approximate

### Specifications (KC-1MRD)

|                 |  |
|-----------------|--|
| Power source    | 24V DC, 450mA. 50mA standby  |
| Power supply    | PS-2420S, PS-2420UL, PS-2420   |
| Communication   | Door calls in w/4-tone chime & image, 30 sec. timed.<br>Lift handset to reply, 2-1/2 min. timed. In standby,<br>press MONITOR to view and hear door. |
| Video monitor   | 4 inch TFT color LCD   |
| Scanning lines  | 525 lines  |
| Image view area | Approx. 60cm horiz., 111~235cm vert.<br>at 130cm high and 50cm from camera.  |
| Night viewing   | White light projected up to 30cm from camera. The<br>background scene beyond 30cm cannot be seen.  |
| Door release    | 12V AC, 400mA.   |
| Wiring          | 2 parallel wires to door, non-polarized.   |
| Distance        | KC-1MRD ~ door 50m(0.65mmø) 100m(1.0mmø)<br>KC-1MRD ~ IER-2 50m(0.65mmø) 100m(1.0mmø)  |



# Video Sentry Color Tilt

DOOR

1

ROOM

3

## KC-1GRD

### Features

- VIDEO SENTRY COLOR TILT 1 door - 3 monitors
- INSTANT ON door audio & video
- All call type room calling
- 100m distance between monitors, looped

#### Door station



**KC-DAR**  
Video door station

#### Master station

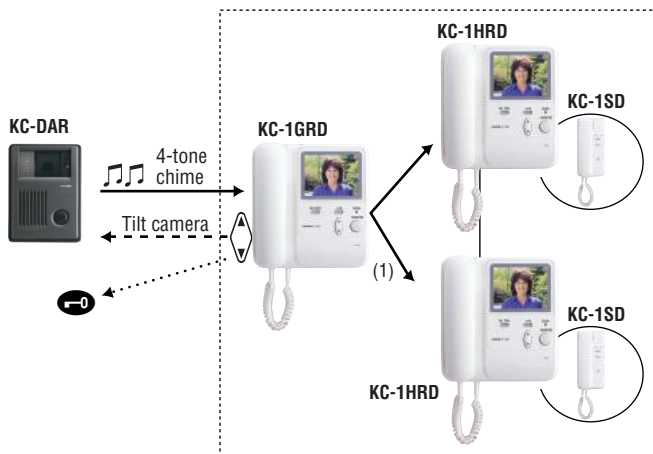


**KC-1GRD**  
Master station

**IER-2**  
Call extension  
→ P.101

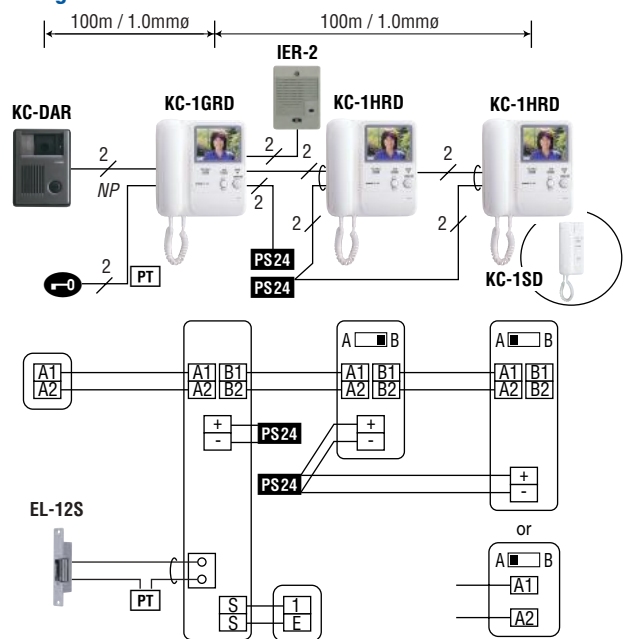
Power supply PS-2420S PS-2420UL PS-2420 → P.104

### Communication network



(1) All call type voice calling (from any).  
Communication on handsets individually.

### Wiring



- Run audio/video wires in a separate jacketed cable from door release wires.
- PS24 : PS-2420S/UL
- PT : AC transformer

### Cable

Vinyl jacketed, PE (polyethylene) insulation cable is recommended. For other types of cables, normal operation and max. communication distance cannot be guaranteed.



- TILT camera control
- Hands-free monitoring audio & image of door
- Video door station's white LED illumination automatically turns on in the darkness

## Sub station



**KC-1HRD**  
Sub master station

or



**KC-1SD\***  
Audio sub station

\*Not available in Europe



**KC-1HRD**  
Sub master station

or



**KC-1SD\***  
Audio sub station

\*Not available in Europe

## Lineup



**KA-DGR PANEL**  
Stainless steel housing for KC-DAR



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**KAW-D**  
30° angled box  
→ P.22



**AC-10F**  
Access control keypad, flush mount  
→ P.99



**JBW-BA**  
Long distance adaptor  
→ P.21



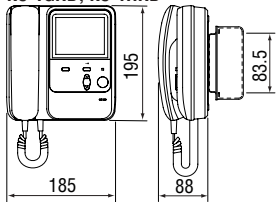
**EL-12S**  
Electric door strike  
→ P.101



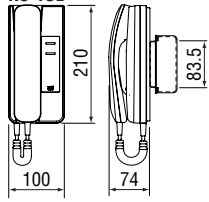
**KC-32EU**  
Picture memory unit  
→ P.21

## Unit dimensions

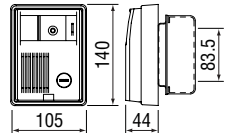
**KC-1GRD, KC-1HRD**



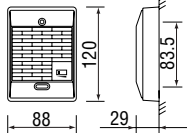
**KC-1SD**



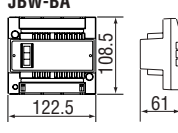
**KC-DAR**



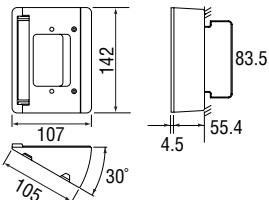
**IER-2**



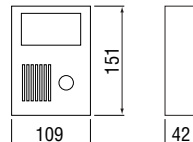
**JBW-BA**



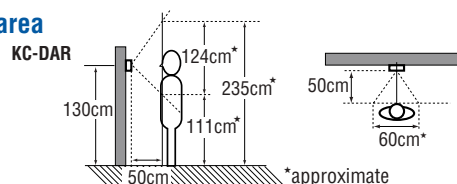
**KAW-D**



**KA-DGR PANEL**



## Image view area



## Specifications (KC-1GRD)

|                 |   |
|-----------------|---|
| Power source    | 24V DC  |
| Consumption     | KC-1GRD: 450mA. 70mA standby.<br>KC-1HRD: 200mA. 50mA standby.<br>KC-1SD: 70mA. 50mA standby.   |
| Power supply    | PS-2420S, PS-2420UL, PS-2420  |
| Video monitor   | 4 inch TFT color LCD  |
| Scanning lines  | 525 lines   |
| Communication   | Door calls in w/4-tone chime, 30 sec. Hear and see door instantly. Pick up at any station to reply, 2-1/2 min. timed. Recycle with MONITOR. Monitor hands-free audio & image of door w/MONITOR. Press ALL CALL to call the other w/pretone & voice. Lift either handset to reply. |
| Image view area | Approx. 60cm Horiz., 111~235cm Vert. at 50cm in front of camera at 130cm high.  |
| Night viewing   | Up to 30cm from camera, with white LED projected. Background scene beyond 30cm cannot be seen.  |
| Door release    | Contact rating: 12V AC, 400mA.  |
| Wiring          | 2 parallel wires to door, non-polarized.<br>2 wires in loop between monitors, plus 2 wires separately run from power supply.  |
| Distance        | KC-1GRD ~ door 50m(0.65mmø) 100m(1.0mmø)<br>KC-1GRD ~ farthest sub 50m(0.65mmø) 100m(1.0mmø)<br>KC-1GRD ~ IER-2 50m(0.65mmø) 100m(1.0mmø)   |



## VIDEO ENTRY SECURITY

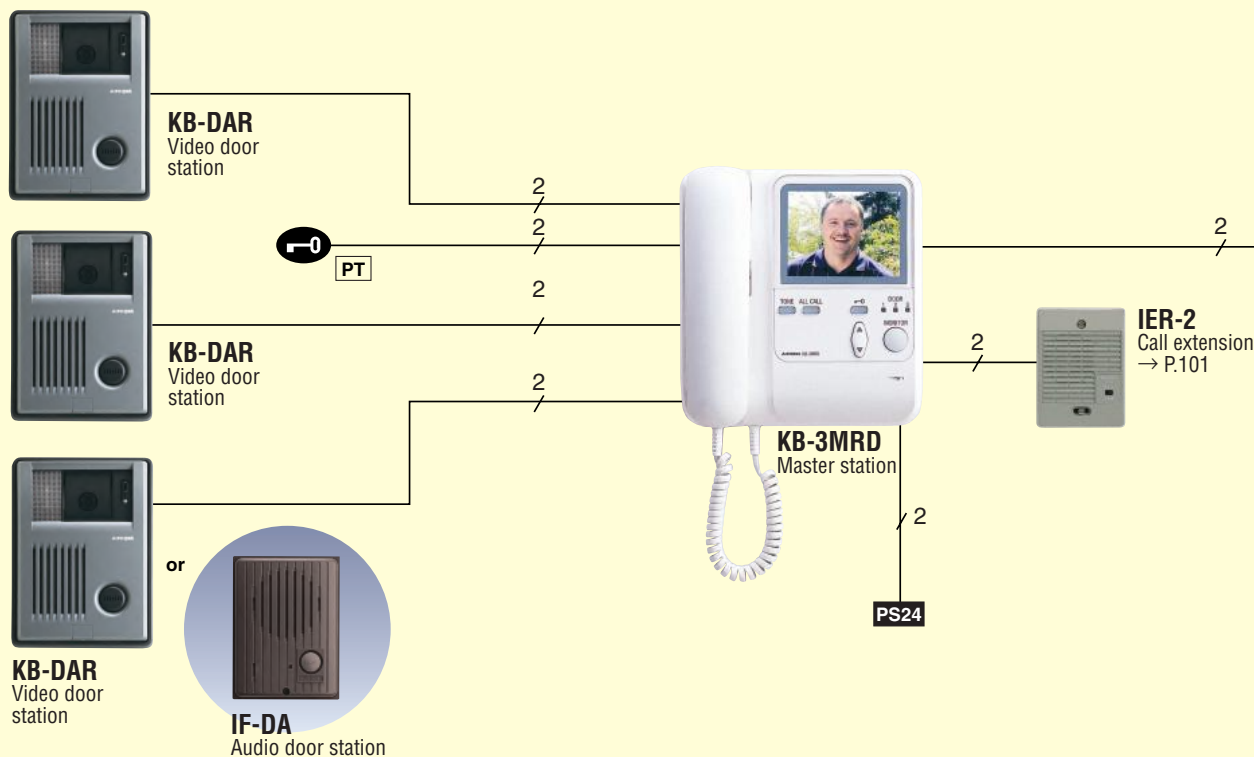
ROOM

5

## Features

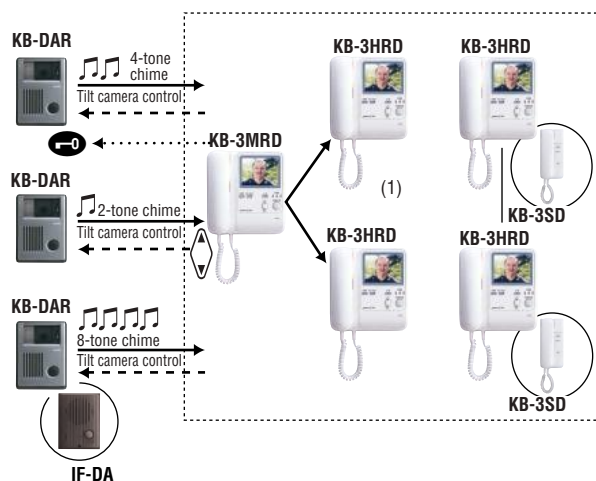
- 3 doors & 5 monitors w/TILT camera control.
- INSTANT ON audio & image of door.
- Selective calling or All Call.
- Audio sub station in lieu of monitor.
- Optional audio door at 3rd entry.

## Master station



**Power supply PS-2420S PS-2420UL PS-2420 → P.104**

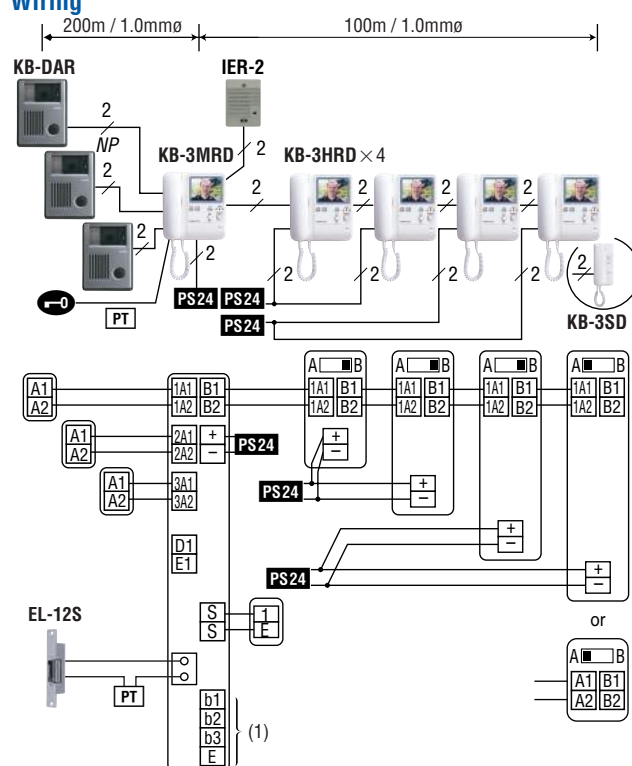
## Wiring



(1) Selective Call or All Call type voice calling (from any). Communication on handsets individually.

**Cable specified for wiring to both door and inside stations**

- 0.65mm outer diameter to 1.2mm dia.
- PE (polyethylene) insulation & vinyl jacketed cable
- Attenuation: less than -6.5dB at 10MHz./100m length.
- Solid copper conductor.
- Line impedance:  $\pm 75$  ohm (less than 100 ohm at the highest).



- D1, E1 : for IF-DA door station instead of third KB-DAR.
  - Run audio/video wires in a separate jacketed cable from door release wires.
- PS24** : PS-2420/S/UL      **PT** : AC transformer    (1) External light control

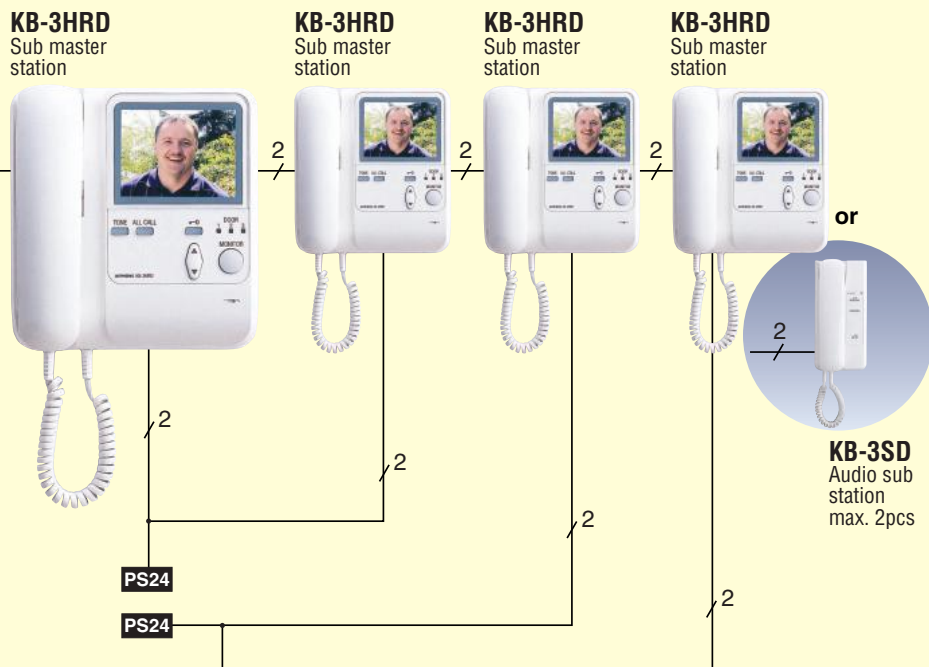
**PS24** : PS-2420/S/UL

**PT** : AC transformer      (1) External light control



- Push chime or receiver volume control.
- Optional selective door release with RY-3DL.
- Hands-free monitoring audio & image of door.
- Video door station's white LED illumination automatically turns on in the darkness.

## Sub station



## Lineup



**KB-32EU**  
Picture memory unit  
→ P.21



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**KA-DGR PANEL**  
Stainless steel housing for KB-DAR



**AC-10F**  
Access control keypad, flush mount  
→ P.99



**KAW-D**  
30° angled box  
→ P.22



**EL-12S**  
Electric door strike  
→ P.101

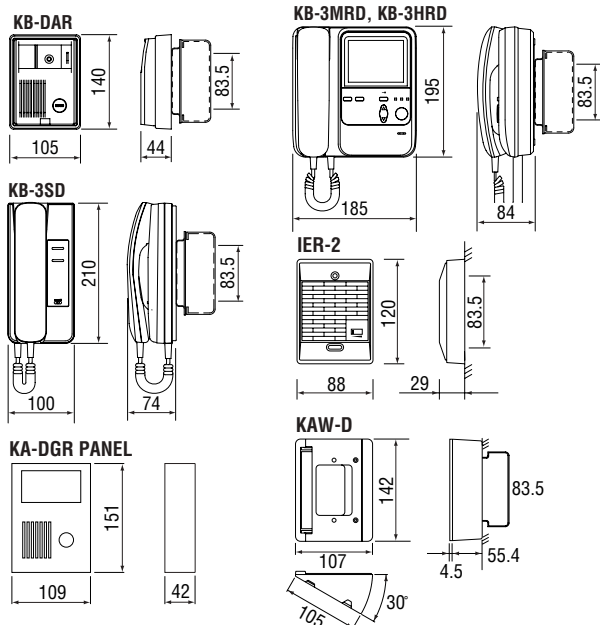


**RY-3DL**  
Door release adaptor  
→ P.21

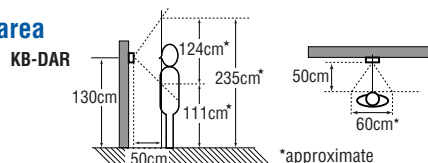


**MAW-B**  
Auxiliary light control relay  
→ P.102

## Unit dimensions



## Image view area



## Specifications (KB-3MRD)

|                 |  |
|-----------------|--|
| Power source    | 24V DC   |
| Consumption     | KB-3MRD: max.710mA, 230mA standby<br>KB-3HRD: max. 260mA, 80mA standby<br>KB-3SD: max 85mA, 50mA standby   |
| Power supply    | PS-2420S, PS-2420UL, PS-2420   |
| Video monitor   | 4 inch TFT color LCD   |
| Scanning lines  | 525 lines  |
| Communication   | Door calls in w/4-tone chime, 30 sec. Hear and see door instantly. Pick up at any station to reply, 2-1/2 min. timed. Recycle with MONITOR. Monitor audio& image of door hands-free w/MONITOR. Press a station selector and call by voice. The called station replies hands-free. Lifting handset, press ALL CALL button to call the other stations w/pretone and voice. |
| Image view area | Approx. 60cm Horiz., 111~235cm Vert. at 130cm high & at 50cm in front of camera.   |
| Night viewing   | Up to 30cm from camera, with white LED projected. Background scene beyond 30cm cannot be seen.   |
| Door release    | Contact rating: 12V AC, 400mA  |
| Wiring          | 2 parallel wires to door, non-polarized.<br>2 wires in loop between monitors, plus 2 wires separately run from power supply.   |
| Distance        | KB-3MRD ~ door 100m(0.65mmø) 200m(1.0mmø)<br>KB-3MRD ~ farthest sub 50m(0.65mmø) 100m(1.0mmø)<br>KB-3MRD ~ IER-2 50m(0.65mmø) 100m(1.0mmø)   |



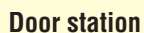
## VIDEO ENTRY SECURITY

DOOR

120

**AX**

- Up to 120 video entrance stations and 8 master stations
- All wired on CAT5e, homerun cabling
- Total hands-free, auto-voice actuation, communication or Press-to-talk operation



**AX-DV**  
Color video  
door station  
surface mount



**AX-DVF**  
Color video  
door station  
flush mount



**AX-DV-P**  
Color video  
door station  
w/space for embed  
proximity reader



**AX-DVF-P**  
Color video door station  
w/space for embed  
proximity reader



**AX-DM**  
Audio door station  
Mullion type



**IE-JA**  
Audio door station



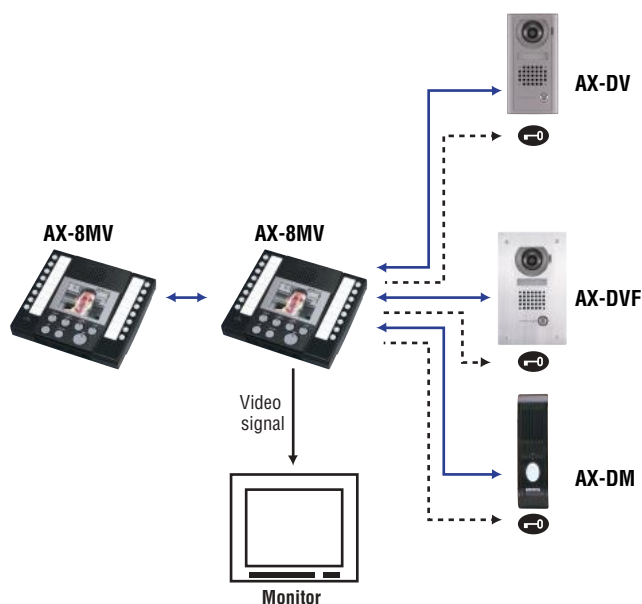
**AX-084C**  
Central exchange unit,  
4 masters and 8 doors

**AX-248C (Photo)**  
Central exchange unit,  
8 masters and 24 doors

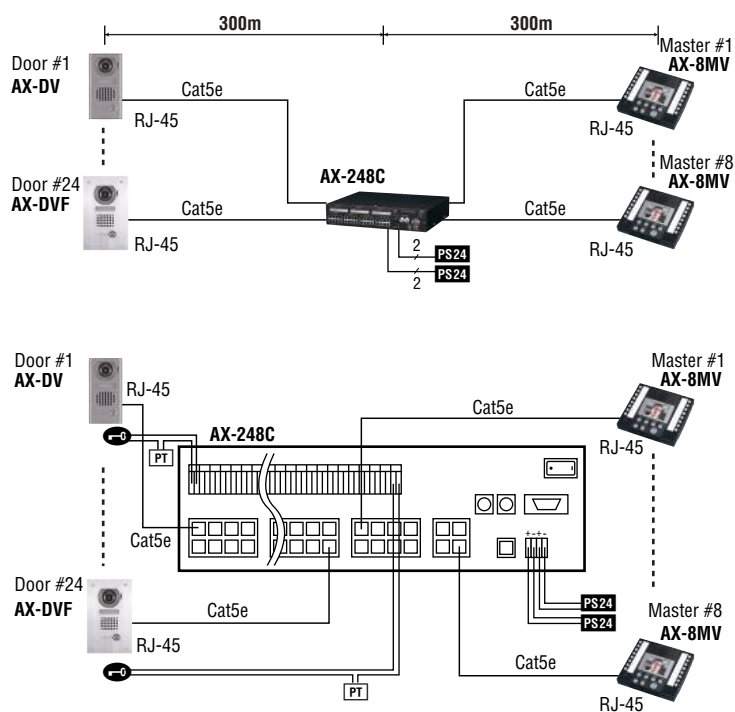


**AX-320C**  
Add-on exchange unit,  
32 doors

**Power supply**  
**PS-2420S PS-2420UL**  
**PS-2420** → P.104



↔ Calling & communication (w/video from door)  
 ---▶ Door release



**PS24** : PS-2420S, PS-2420UL, PS-2420      **PT** : AC transformer



- Two talk channels and two video channels
- Communication privacy
- Masters available with 3.5 inch color TFT LCD
- Selective door release
- Master-to-master selective calling and All Call
- Standard or Priority call levels from door stations

- Scan monitoring: Hands-free audio/visual monitoring
- Video output from CEU and AX-8MV
- Integrate with CCTV, Access control etc.
- PC interface for programming and event logging
- Rack or wall mountable CEU
- Compatible with IE Series door stations
- Optional features: headset, footswitch, and PC remote control

## Master station



**AX-8MV**

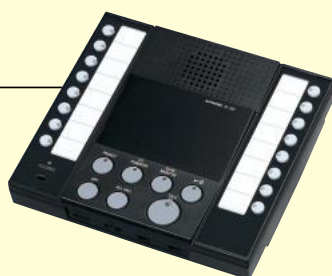
8-call color monitor master station

**AX-8MV-W**  
(white)



**AX-16SW**

16-call add-on selector



**AX-8M**

8-call audio master station



**AX-8MV, AX-16SW**

## Lineup



**EL-12S**

Electric door strike  
→ P.101



**AC-10S**

Access control  
keypad,  
surface mount  
→ P.99

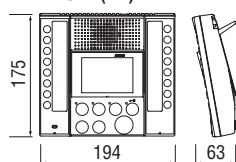


**AC-10F**

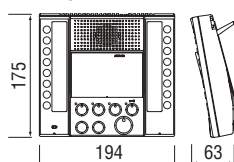
Access control  
keypad,  
flush mount  
→ P.99

## Unit dimensions

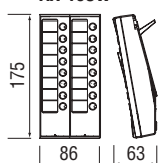
**AX-8MV(-W)**



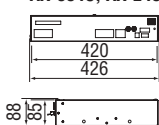
**AX-8M**



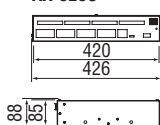
**AX-16SW**



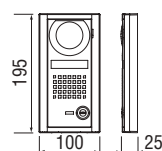
**AX-084C, AX-248C**



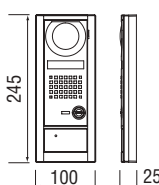
**AX-320C**



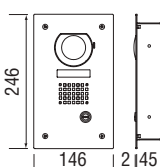
**AX-DV**



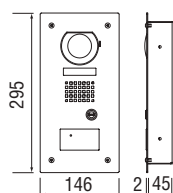
**AX-DV-P**



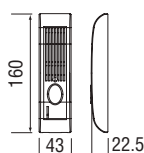
**AX-DVF**



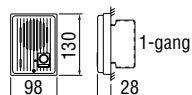
**AX-DVF-P**



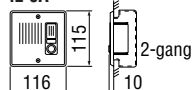
**AX-DM**



**IF-DA**

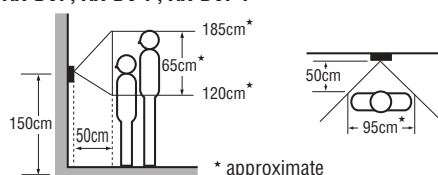


**IE-JA**



## Image view area

- AX-DV, AX-DVF, AX-DV-P, AX-DVF-P



## Specifications (AX)

|                      |  |
|----------------------|--|
| Power source         | 24V DC, 2A (Two Power supplies per video system)   |
| Power supply         | PS-2420S, PS-2420UL, PS-2420   |
| Current consumption  | AX-084C: Video (Max.) 650mA, Audio (Max.) 700mA<br>AX-248C: Video (Max.) 1150mA, Audio (Max.) 1250mA<br>AX-320C: Video (Max.) 280mA, Audio (Max.) 180mA                                    |
| Calling              | Normal call: an intermittent tremolo<br>Priority call: a rapid intermittent tremolo<br>Approx. 10-600 sec. or infinite   |
| Communication        | AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 1 sec. or more.<br>Approx. 30-600 sec. |
| Video monitor        | 3.5 inch direct view TFT color LCD   |
| Scanning lines       | 525 lines  |
| Night viewing        | Up to 30cm from camera, with white LED projected, background beyond 30cm cannot be seen.   |
| Door release contact | 24V AC/DC, 0.5A  |
| Outside video output | AX-084C, 248C: NTSC standard 1Vpp (0.7-1.4Vpp)<br>BNC x 2<br>Switching signal: Open collector output<br>24V DC, 30mA<br>RJ-45 x 2  |
| Wiring               | AX-8MV: NTSC standard 1Vpp (0.7-1.4Vpp)<br>Homerun CAT5e wire to CEU   |
| Wiring distance      | CEU to door: 300m (CAT5e)<br>CEU to master: 300m (CAT5e)   |



# Video Accessories

## Picture memory unit



**KC-32EU**  
Picture memory unit



**KC-1GRD** **KC-32EU**  
Master station Picture memory unit

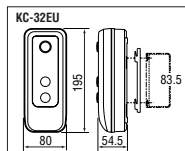
### Features

- Easy add-on to present or new system, color or black & white
- 4 pictures in 1 frame (16 frames), 16, 32 or 60 individual picture save mode
- Max. 8 pictures stored in memory

### Used for

KC-1MRD, KC-1GRD, KB-3MRD

### Unit dimensions

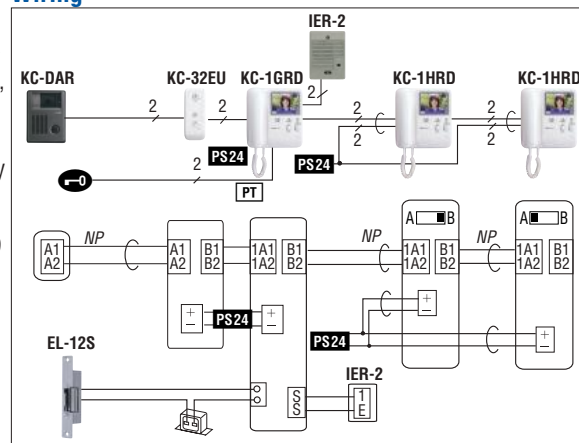


Single-gang mounting

### Specifications (KC-32EU)

|                 |  |
|-----------------|--|
| Power source    | 18V DC, 230mA, 24V DC, 160mA   |
| Power supply    | PS-2420S, PS-2420UL, PS-2420   |
| Channel         | One video door per unit  |
| Wiring          | 2 parallel wires to door (NP).<br>2 wires to Master (Polarized).   |
| Wiring distance | KC-32EU to door 50m(0.65mmø) 100m(1.0mmø)<br>KC-32EU to master 25m(0.65mmø) 5m(1.0mmø)<br>KC-32EU to Power supply 10m(1.0mmø) (20m w/1.2mmø) |

### Wiring



**PS24** : PS-2420S, PS-2420UL, PS-2420

**PT** : AC transformer

## Long distance adaptor for color

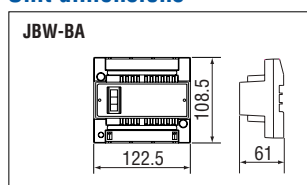
### Features

- When JA or KC color video door station is more than 100m to max. 350m away, or JF color video door station is more than 100m to max. 300m away.
- One required for each door station.

### Used for

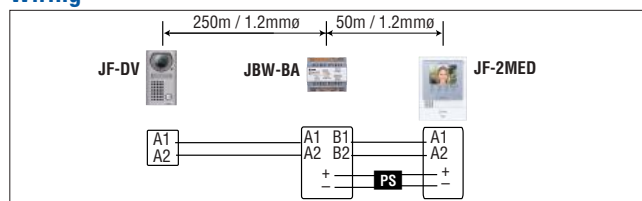
KC-1MRD, KC-1GRD  
KC-32EU + KC-1ARD/KC-1GRD  
JA-2MECD, JA-2MCD  
JF-1MD, JF-2MED

### Unit dimensions



**JBW-BA**  
Long distance adaptor

### Wiring



### Cable

1.0mmø to 1.2mmø. Solid copper conductor PE insulation (not PVC).

### Specifications

|                     |   |
|---------------------|---|
| Power source        | 18VDC, 24VDC<br>PS-1820S, PS-1820UL, PS-1820, PS-2420S,<br>PS-2420UL, PS-2420 of system or separate   |
| Current consumption | 120mA   |
| Wiring              | 2 parallel wires to ea. door & master.  |
| Distance            | JA, KC door~JBW-BA 100m~300m(1.2mmø)<br>JBW-BA~JA, KC master 50m(1.2mmø)<br>JF door~JBW-BA 100m~250m(1.2mmø)<br>JBW-BA~JF master/JF-1FD/JF-1SD 50m(1.2mmø)<br>JBW-BA~PS 50m(1.2mmø) |

## Selective door release adaptor

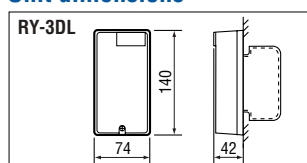
### Features

- Selective door release with one button
- Door release contacts release the door where communication is established.
- Normally open contacts for electric strike. Normally closed contacts to work with magnetic locks.

### Used for

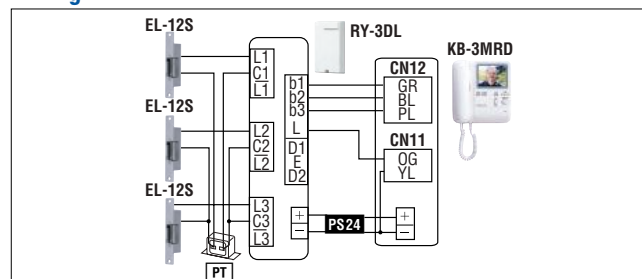
KB-3MRD, IE-2AD(U)  
JF-2MED

### Unit dimensions



**RY-3DL**  
Door release adaptor

### Wiring



GR: Green BL: Blue PL: Purple OG: Orange YL: Yellow

**PT** : AC transformer **PS24** : PS-2420/S/UL

### Specifications

|                 |  |
|-----------------|--|
| Power source    | 12~24V DC, 30mA 12~16V AC, 60mA  |
| Power supply    | PS-2420/S/UL; PS-1820/S/UL; PS-1225/S/UL; AC trans.                                      |
| Relay contacts  | Normally open output. 1A at 50V AC. 1A at 30V DC (for other types, use matching relay)   |
| Wiring distance | Master to RY-3DL 50m(0.65mmø) 100m(1.0mmø)<br>RY-3DL to EL-12S 50m(0.65mmø) 100m(1.0mmø) |



## 30° angle box



**KAW-D**  
30° angled box

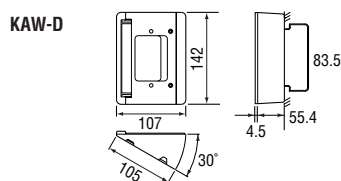
### Features

- 30° Angle Box for mounting video door station to position door camera to view visitors better.
- Designed for 1-gang surface mounting.

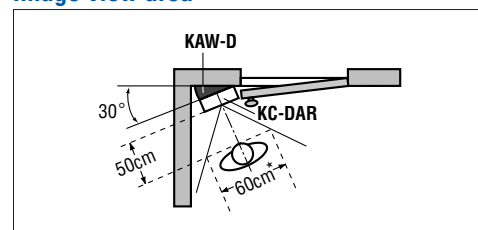
### Used for

KC-DAR, KB-DAR

### Unit dimensions



### Image view area



\*Figure is approximate.

## Relay



**TAR-3**  
External signaling relay

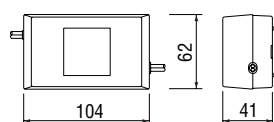
### Features

Allows integration of a doorbell, etc. to intercom. The device will be activated as long as handset is ringing. When the intercom is picked up, the device will no longer be activated.

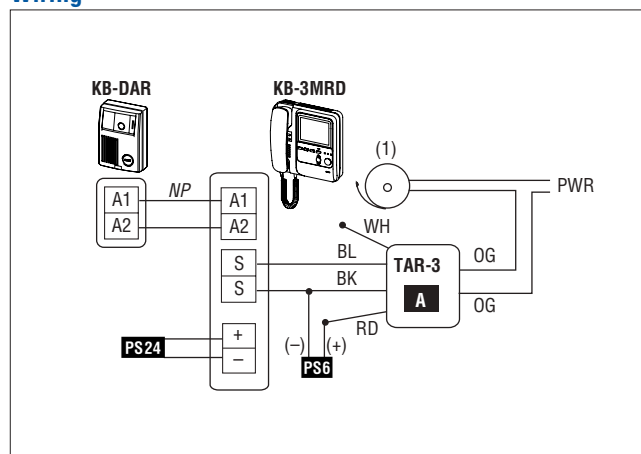
### Used for

IE chime tone  
IE-8MD  
KC, KB series  
AT-406  
TB-SE(TC-M)  
DB-1MD

### Unit dimensions



### Wiring



(1) Bell, etc. PWR : Power source

WH : White BL : Blue BK : Black(-) RD : Red(+) OG : Orange

PS6 : PS-0602D, PS-0602C

### Specifications (TAR-3)

|  |                                       |
|--|---------------------------------------|
| Power source   | 6V DC, supplied by PS-0602D, PS-0602C |
| Contact rating   | 0.3A, 240V AC<br>1.0A, 24V DC         |
| Doorbell or buzzer must be AC operated or DC mechanical type only. |                                       |



# Hands-free Two-Wire Electric Lock Door Phone

**NEW**

DOOR

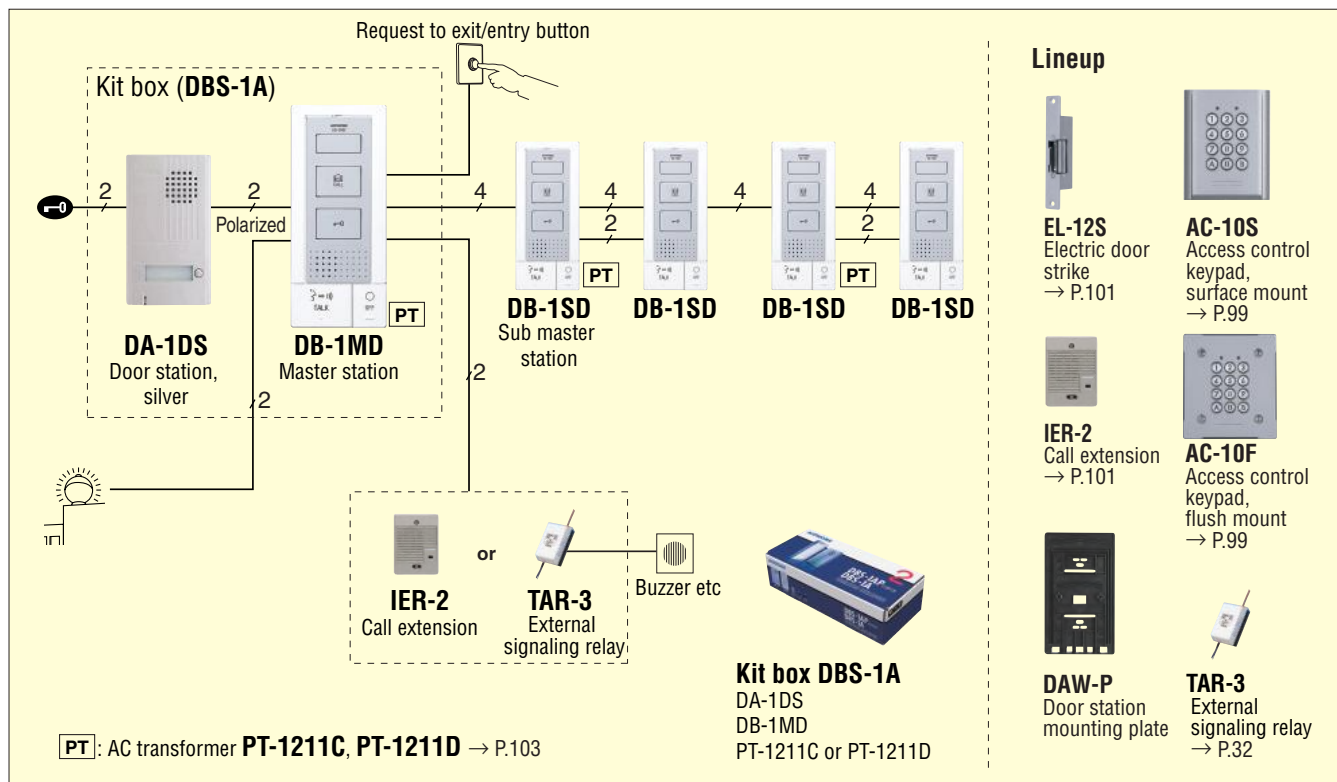
ROOM

1

5

**DB-1MD**

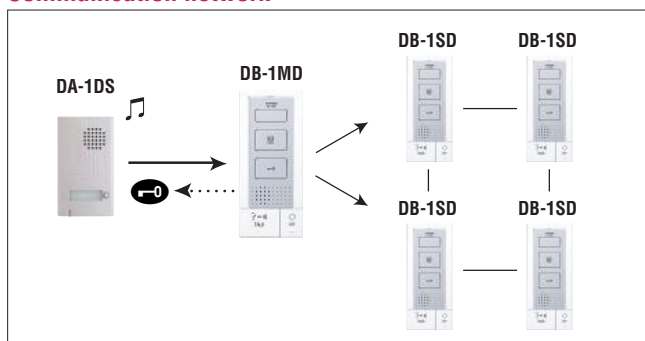
AUDIO ENTRY SECURITY



## Features

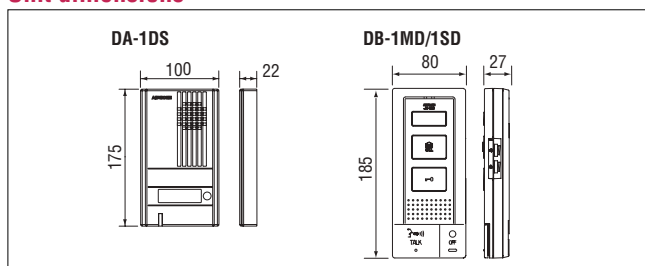
- Door release wired from door station, without additional transformer
- Two-wire system including door release
- Total hands-free communication, auto-voice actuation
- Press-to-talk operation available
- Up to 5 inside stations
- All call for internal communication
- User-optional function button
- Call tone MUTE with indicator
- Call extension sounder
- Directory backlighting
- Continuous chime tone (approx. 4 seconds)

## Communication network

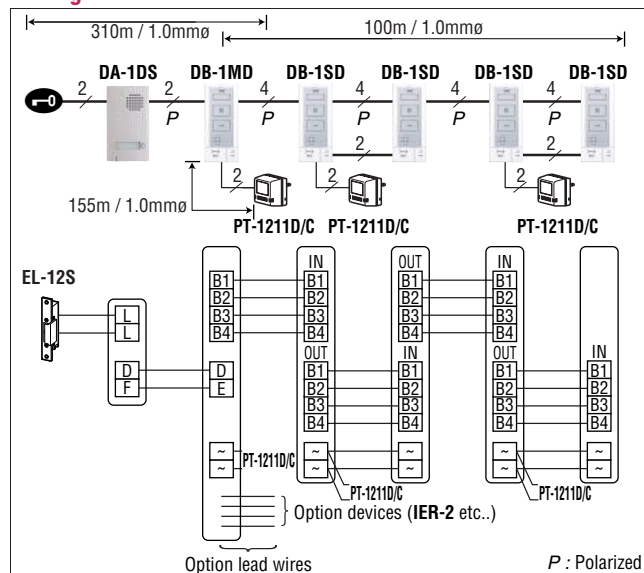


Press "call" button to ring inside station (s).

## Unit dimensions



## Wiring



## Specifications (DB-1MD, 1SD)

|                        |   |
|------------------------|---|
| Power source           | 15V AC  |
| AC transformer         | PT-1211C, PT-1211D  |
| Communication          | Approx. 1 min.<br>AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 1 sec. or more. |
| Door release           | EL-12S or others (More than (AC) 70Ω, AC 9.5 ~ 20V)   |
| Option contact (AC/DC) | Voltage Max. : 24V, Min. : 1V<br>Current Max. : 1.6A, Min. : 10mA   |
| Wiring                 | 2 wires, throughout AC trans - Master - Door - Door release   |
| Distance               | PT-1211C/D ~ Door rise. 110m(0.65mmø)<br>200m(0.8mmø) 310m(1.0mmø)<br>PT-1211C/D ~ DB-1MD 55m(0.65mmø)<br>100m(0.8mmø) 155m(1.0mmø)<br>DB-1MD ~ farthest DB-1SD 100m(0.65 ~ 1.0mmø)   |



# Two-Wire Electric Lock Door Phone

## DOOR 1 ROOM 1 DA-1AS

### Boxed set



**DA-1AS**  
Kit box (silver color)



**DA-1DS**  
Door station  
silver panel



**DA-1MD**  
Master station



**DA-1AG**  
Kit box (gray color)



Door station  
gray panel



**DA-1MD**  
Master station

\*Add an appropriate power supply.

**PT**: AC transformer

**PT-1211D PT-1211C** → P.103

\*Add an appropriate AC transformer.

### Lineup



**EL-12S**  
Electric door  
strike  
→ P.101



**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**DAR-1**  
Call extension



**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99

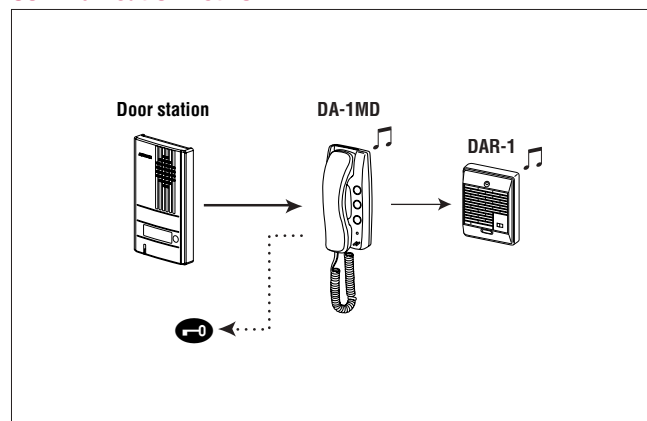


**DAW-P**  
Door station  
mounting plate  
(83.5mm)

### Features

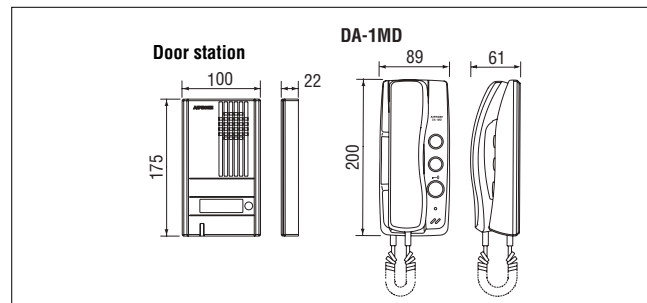
- Two-wire system including door release
- Door release wired to door station, requiring no power transformer
- User-optional function button
- Call tone MUTE with indicator
- Call extension sounder

### Communication network

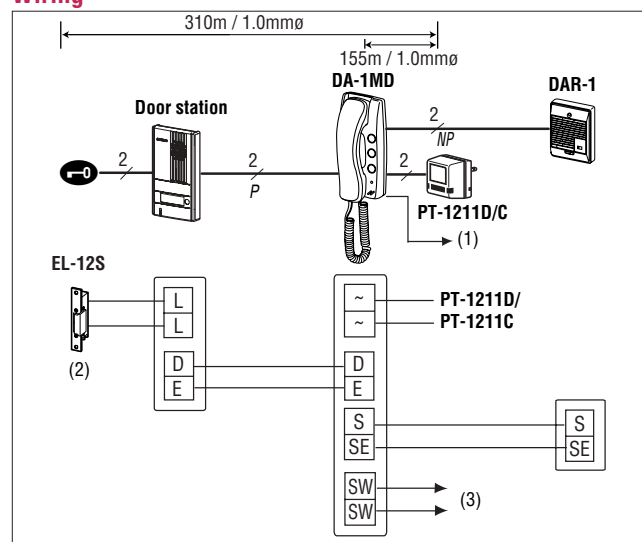


Hold down "CALL" button to ring inside station.

### Unit dimensions



### Wiring



- Place PT-1211D/C inside electrical enclosure and connect to breaker, less than 16A.
- Do not use PT-1211D/C for any other equipment.
- Terminals SW, SW: Dry-closure contact 18V AC, 40mA to connect user-optional function (Gate, Light, Garage, Proximity Access Control, etc.)
- (1) External device Relay/Controller
- (2) Door release (16V AC, 20Ω or more)
- (3) User-optional function (18V AC, 40mA)

### Specifications (DA-1AS, G)

|               |   |
|---------------|---|
| Power source  | 15V AC  |
| Power supply  | PT-1211D, PT-1211C  |
| Communication | Press and hold down Button to call.   |
| Wiring        | 2 wires, throughout system: AC trans - Master<br>- Door- Door release   |
| Distance      | PT-1211D/C ~ Door rise. 110m(0.65mmø)<br>200m(0.8mmø) 310m(1.0mmø)<br>PT-1211D/C ~ DA-1MD 55m(0.65mmø)<br>100m(0.8mmø) 155m(1.0mmø) |



# Chime Tone Intercom

## DOOR 1 ROOM 1 C-123L/A

### Door station



**C-D**  
Door station

### Master station



**C-ML/A**  
Master station

### Lineup



**AC-10S**  
Access control keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control keypad,  
flush mount  
→ P.99



**EL-12S**  
Electric door  
strike  
→ P.101

### Boxed set

**C-123L/A**  
Chime-Com boxed set

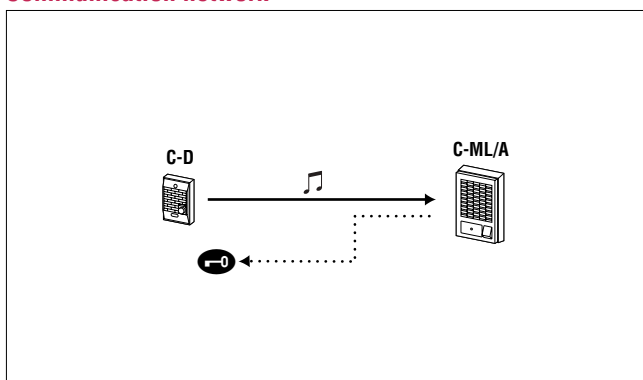
**Power supply**  
**PS-0602D PS-0602C** or Batteries  
→ P.103

AUDIO ENTRY SECURITY

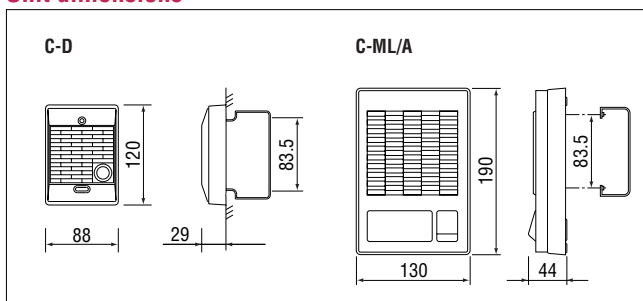
### Features

- Open voice door answering with door release control
- Adjustable communication volume
- Automatically turns off
- Battery or DC power supply

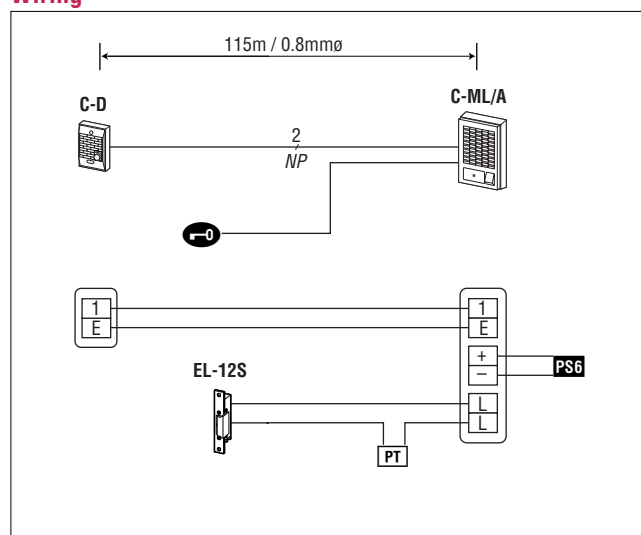
### Communication network



### Unit dimensions



### Wiring



**PT** : AC transformer **PS6** : PS-0602D, PS-0602C

### Specifications (C-123L/A)

|               |  |
|---------------|--|
| Power source  | 6V DC, 85mA  |
| Power supply  | PS-0602D, PS-0602C or Batteries "C"(SUM-2) x 4 pcs.  |
| Communication | Door calls in w/2-tone chime, not adjustable.<br>Press TALK button to reply, release to listen. Power automatically shuts off circuit. |
| Wiring        | 2 parallel wires to door, non-polarized<br>(+ 2 for EL-12S).   |
| Distance      | Master to door 75m(0.65mmø) 115m(0.8mmø)   |



# Chime Tone Intercom

DOOR

1


▶

ROOM

1


TCS-MH

Door station



TC-DC  
Door station

Master station



TC-MH  
Master station

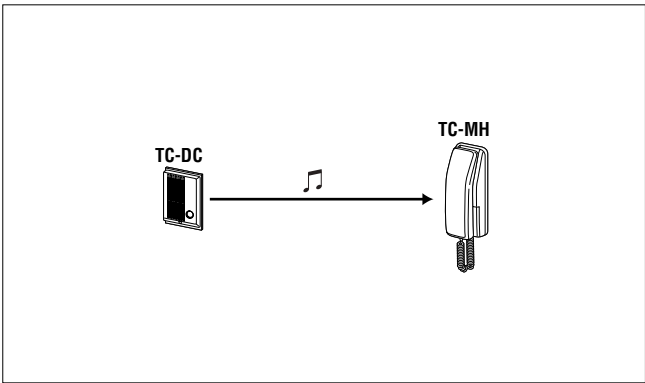
Boxed set

TCS-MH  
Chime-Phone set

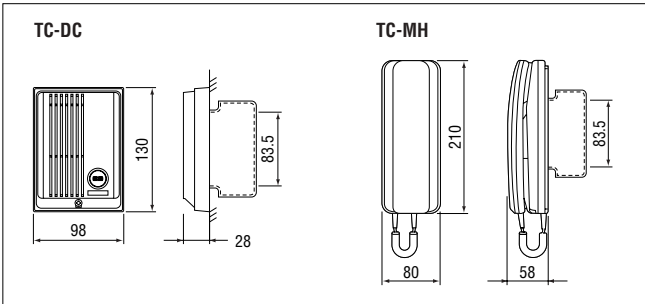
### Features

- Chime-phone intercom set, battery-operated
- Adjustable chime volume
- Battery status indicator

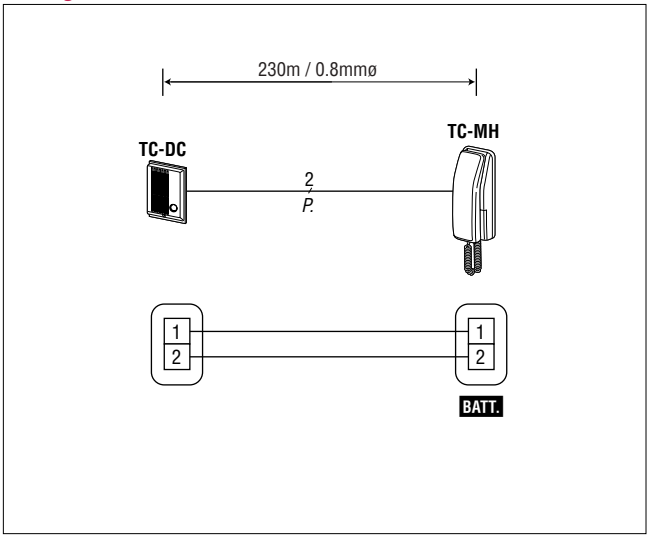
### Communication network



### Unit dimensions



### Wiring



BATT. : Batteries P. Polarized

### Specifications (TCS-MH)

|               |   |
|---------------|---|
| Power source  | 6V DC, 70mA   |
| Power supply  | Batteries "AA"(SUM-3) x 4 pcs                               |
| Communication | Door calls in w/2-tone chime, adjustable. Pick up to reply. |
| Wiring        | 2 parallel wires, polarized.                                |
| Distance      | TC-MH to door 150m(0.65mmø) 230m(0.8mmø)                    |



# Chime Tone Intercom

DOOR

1

ROOM

1

## IE-1AD(U)

### Door station



**IF-DA**  
Door station  
→ P.31

### Power supply

12~24V DC power supply  
12~16V AC transformer

### Master station



**IE-1AD(U)**  
Master station

### Lineup



**EL-12S**  
Electric door strike  
→ P.101



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**IER-2**  
Call extension  
→ P.101



**AC-10F**  
Access control keypad, flush mount  
→ P.99

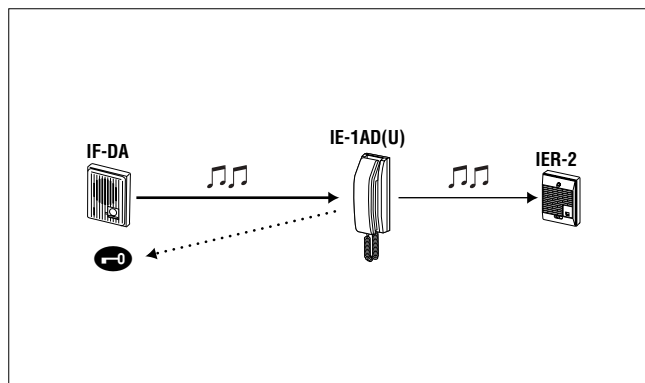


**TAR-3**  
External signaling relay  
→ P.32

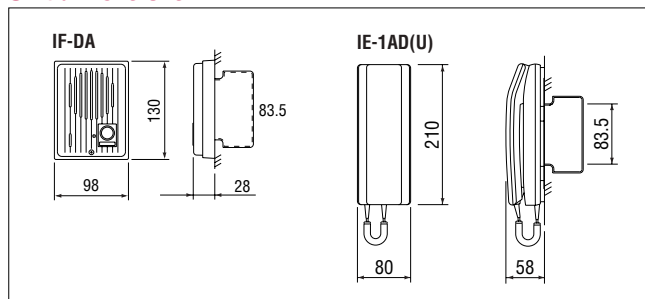
### Features

- Chime tone intercom for 2 locations
- Door release button
- AC or DC power source

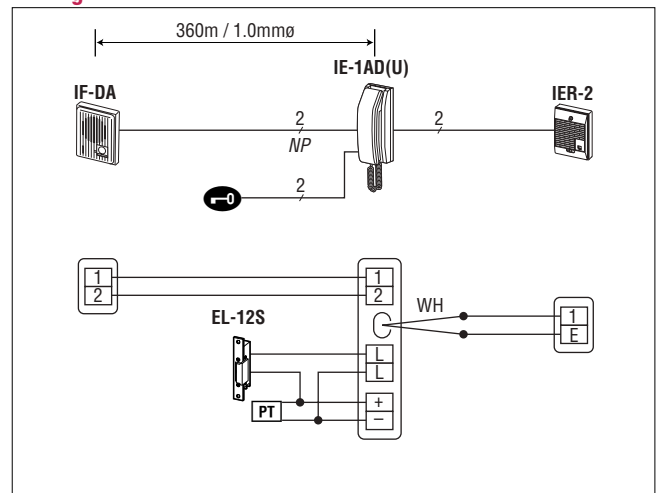
### Communication network



### Unit dimensions



### Wiring



- Run audio wires in a separate jacketed cable from door release wires.

PT : AC transformer WH : White(2)

### Specifications (IE-1AD(U))

|               |   |
|---------------|---|
| Power source  | 12~16V AC, 180mA<br>12~24V DC, 160mA                                |
| Power supply  | AC transformer (for IE & EL-12S), PS-1225/S/UL.                     |
| Communication | Door calls in w/4-tone chime, adjustable. Pick up handset to reply. |
| Door release  | Contact rating: 24V AC/DC, 500mA                                    |
| Wiring        | 2 parallel wires, non-polarized<br>(+2 for EL-12S)                  |
| Distance      | IE-1AD(U) to door 150m(0.65mmø) 360m(1.0mmø)                        |



# Chime Tone Intercom

## DOOR 1 ROOM 3 IE-1GD(U)

### Door station



**IE-JA**  
Door station  
→ P.31

### Master station



**IE-1GD(U)**  
Master station

### Sub station



**IEH-1CD**  
Sub master station

### Power supply

12~24V DC power supply or  
12~16V AC transformer

### Lineup



**EL-12S**  
Electric door strike  
→ P.101



**AC-10S**  
Access control keypad,  
surface mount  
→ P.99



**IER-2**  
Call extension  
→ P.101



**AC-10F**  
Access control keypad,  
flush mount  
→ P.99

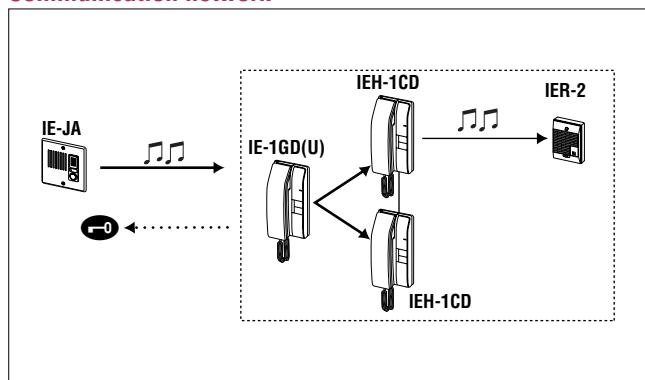


**TAR-3**  
External signaling relay  
→ P.32

### Features

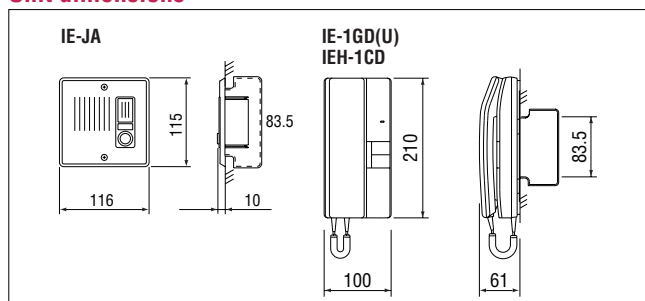
- 3-station chime tone intercom with one door
- Door release button
- All call type room calling
- Chime tone cutout at sub station
- AC or DC power source

### Communication network

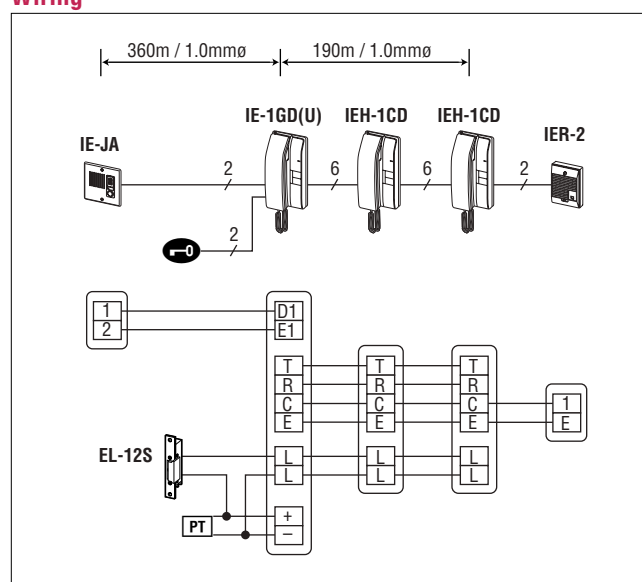


All Call type calling with pretone & voice

### Unit dimensions



### Wiring



- Run audio wires in a separate jacketed cable from door release wires.

[PT] : AC transformer

### Specifications (IE-1GD(U))

|               |  |
|---------------|--|
| Power source  | 12~16V AC, 200mA<br>12~24V DC, 200mA   |
| Power supply  | AC transformer 12~16V, 550mA (for both IE & EL-12S), PS-1225/S/UL  |
| Communication | Door calls in w/4-tone chime to all stations. Chime can be cut out at sub(s). Pick up any station to reply. Press CALL to call other inside stations with pretone & voice. |
| Door release  | Contact rating: 24V AC/DC, 500mA   |
| Wiring        | 2 parallel wires to door, non-polarized.<br>6 wires in loop, between rooms.  |
| Distance      | IE-1GD(U) to door 150m(0.65mmø) 360m(1.0mmø)<br>Between rooms 75m(0.65mmø) 190m(1.0mmø)  |



# Chime Tone Intercom

DOOR

2

ROOM

3

## IE-2A2DU

### Door station



**IE-JA**  
Door station  
→ P.31



**IF-DA**  
Door station  
→ P.31  
**Power supply**  
12~24V DC power supply  
12~16V AC transformer

### Master station



**IE-2A2DU**  
Master station, 2 door releases



**IE-2AD(U)**  
Master station

### Sub station



**IEH-1CD**  
Sub master station  
**IEH-1C2D**  
2 door release

### Lineup



**EL-12S**  
Electric door strike  
→ P.101



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**IER-2**  
Call extension  
→ P.101



**AC-10F**  
Access control keypad, flush mount  
→ P.99

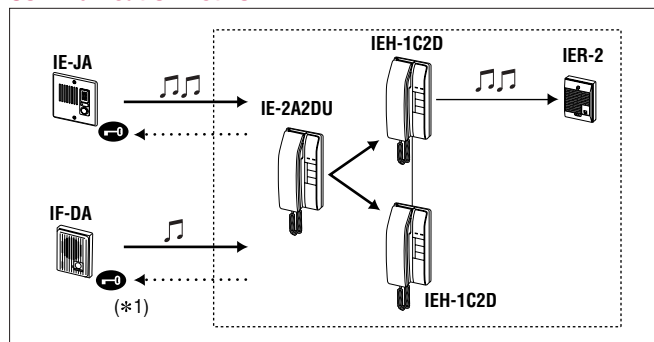


**TAR-3**  
External signaling relay  
→ P.32

### Features

- 3-station chime tone intercom
- 2 door stations w/door release
- All call type room calling
- Chime tone cutout at sub station
- Door selective monitoring at master station
- AC or DC power source

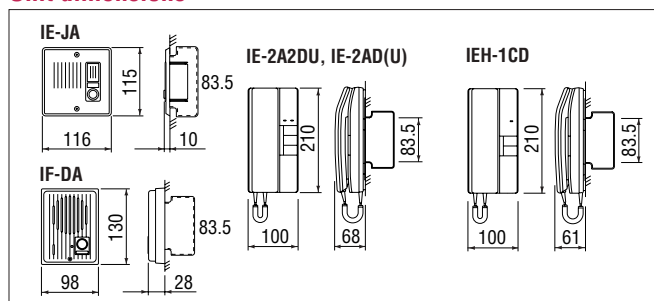
### Communication network



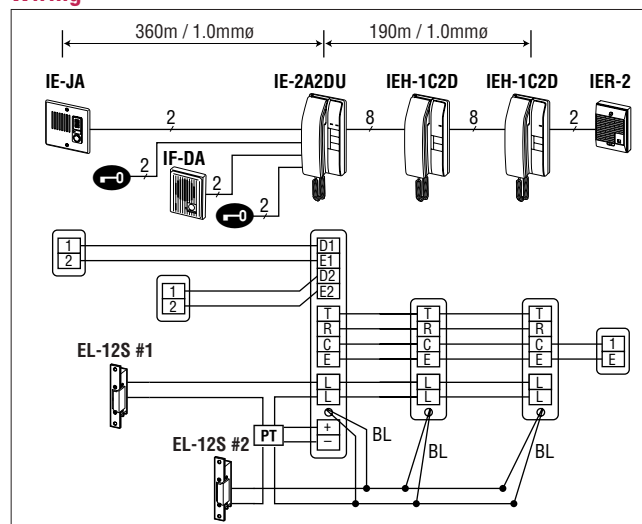
All call type voice calling between rooms

(\*1) Available in IE-2A2DU or IE-2AD(U) w/RV-3DL

### Unit dimensions



### Wiring



BL : Blue(2) [PT] : AC transformer

### Specifications (IE-2A2DU)

|               |  |
|---------------|--|
| Power source  | 12~16V AC, 200mA<br>12~24V DC, 200mA   |
| Power supply  | AC transformer 12~16V AC, 550mA (for both IE & EL-12S). PS-1225/S/UL   |
| Communication | Door calls in w/4- or 2-tone chime to all stations, 45 sec. Chime can be cut out at sub. Pick up any station handset to reply. Press CALL to call other stations with pretone & voice. |
| Door release  | Contact rating: 24V AC/DC, 500mA   |
| Wiring        | 2 parallel wires, non-polarized.<br>6 wires in loop, rooms.  |
| Distance      | IE-2A2DU to door 150m(0.65mmø) 360m(1.0mmø)<br>Between rooms 75m(0.65mmø) 190m(1.0mmø)   |



# Chime Tone Intercom

DOOR

2

ROOM

6

## IE-8MD

### Door station



**IE-JA**  
Door station  
→ P.31



**IF-DA**  
Door station  
→ P.31

### Master station



**IE-8MD**  
6-call master

### Sub station



**IE-8HD**  
6-call sub master

### Lineup



**EL-12S**  
Electric door strike  
→ P.101



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**TAR-3**  
External signaling relay  
→ P.32



**AC-10F**  
Access control keypad, flush mount  
→ P.99



**RY-AC/A**  
External signaling relay  
→ P.101

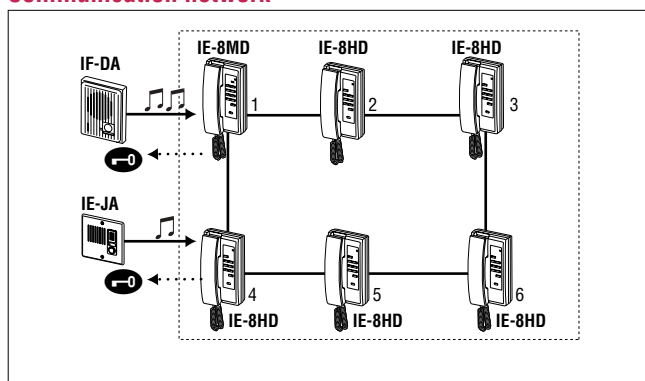
### Power supply

**PS-1225S PS-1225UL PS-1225** → P.103  
**PS-1820S PS-1820UL PS-1820** → P.104

### Features

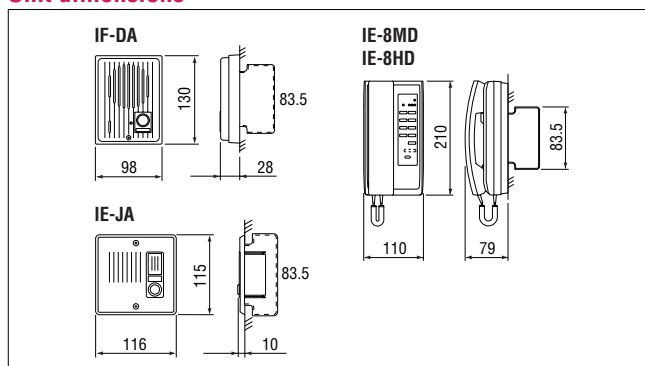
- Expandable to 6-station system
- Selective or All Call between inside stations
- Door select and monitor button (on IE-8MD only)
- AC or DC power source
- Selective door release control
- Chime tone cutout on inside stations, selectable

### Communication network

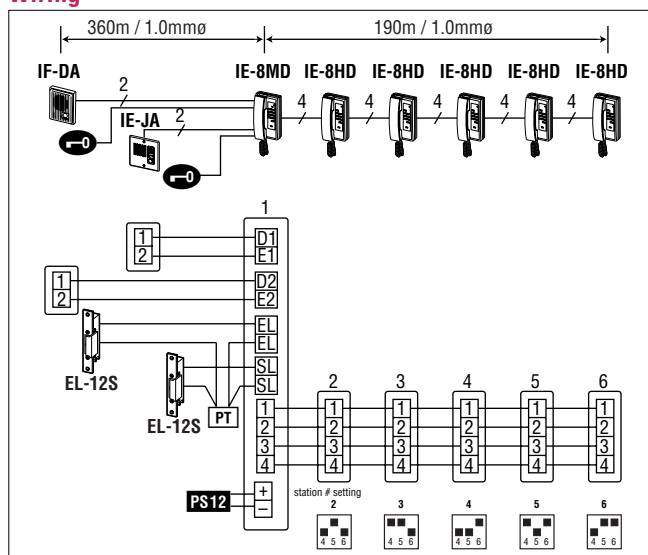


Internal communication by Selective Call or All Call. Chime tone can be muted at each station selectively.

### Unit dimensions



### Wiring



[PT] : AC transformer [PS12] : PS-1225/S/UL [PS18] : PS-1820/S/UL or AC transformer

### Specifications (IE-8MD)

|               |  |
|---------------|--|
| Power source  | 12~16V AC, 900mA<br>12~18V DC, 500mA   |
| Power supply  | <b>Intercom only;</b> 12V or 18V DC power supply.<br>AC transformer 12V AC, 10VA or 16V AC, 14VA w/no load voltage 20V or less.<br><b>Intercom + EL-12S;</b> 12V AC, 10VA only                 |
| Communication | Door calls in w/4- or 2-tone chime and LED, 45 sec.<br>Pick up any handset to reply. Press 1 ~ 6 to call other station with pretone and voice or All Call. Single channel, common talk system. |
| Door release  | Contact rating: 24V AC/DC, 350mA   |
| Wiring        | 2 parallel wires, to door.<br>4 wires in loop, between rooms.  |
| Distance      | IE-8MD to door 150m(0.65mmø) 360m(1.0mmø)<br>Rooms 75m(0.65mmø) 190m(1.0mmø)   |



# Audio Door Stations

## IE/IF Series

### Surface mount station



**IF-DA**  
Door station



**IE-DC**  
Door station



**AX-DM**  
Audio door station  
Mullion type

### Flush mount station

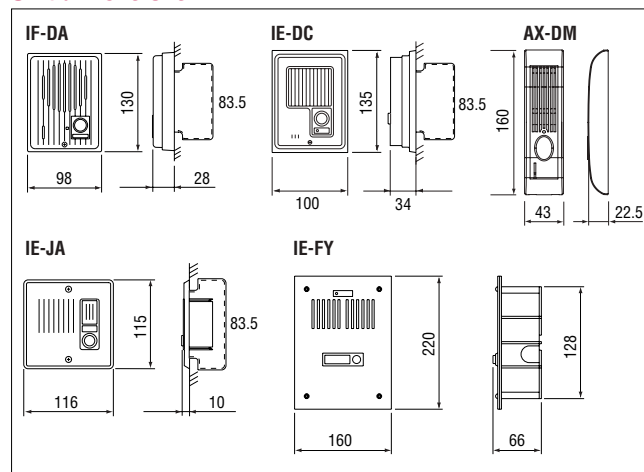


**IE-JA**  
Door station



**IE-FY**  
Door station

### Unit dimensions



### Specifications

|                 |  |
|-----------------|--|
| Wiring          | 2 parallel wires to master, non-polarized  |
| Wiring distance | 150m(0.65mmø) 230m(0.8mmø)<br>360m(1.0mmø) |

### Features

- Weather resistant audio door stations
- Hands-free communication
- Call button rings chime or tone at inside station

### Used for

IE-1AD(U), IE-1GD(U),  
IE-2AD(U), IE-8MD,  
TD-nH/B w/DE-UR  
(n=3, 6, 12 & 24)  
TC-M w/TB-AD1  
TC-M w/TB-AD10  
AX

### Some applications

- At multiple doors w/TB-AD10

## IE-DL Series

### Surface mount station



**IE-DL1**  
1-call surface-mount door station

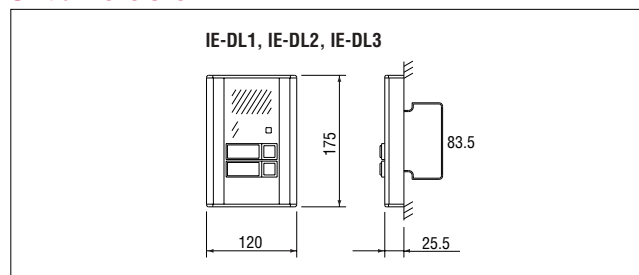


**IE-DL2**  
2-call surface-mount door station



**IE-DL3**  
3-call surface-mount door station

### Unit dimensions



### Specifications

|                 |  |
|-----------------|--|
| Power source    | 12~16V AC, 140mA or 12~24V DC, 140mA   |
| Communication   | Press CALL to ring a flat station. Talk hands-free after the inside station replies. |
| Wiring          | 4 to 8 wires, polarized.   |
| Wiring distance | 150m(0.65mmø) 230m(0.8mmø)<br>360m(1.0mmø)   |

### Features

- 1~3-call surface-mount door station with aluminum panel.
- Directory back illumination.
- AC/DC power source.

### Used for

IE-1AD(U), IE-1GD(U),  
IE-2AD(U), IE-2A2DU,  
IE-8MD, TD-nH/B w/DE-UR  
(n=3, 6, 12 & 24)



Relay



**TAR-3**  
External signaling relay

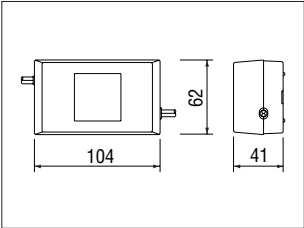
Features

Allows integration of a doorbell, etc. to intercom. The device will be activated as long as handset is ringing. When the intercom is picked up, the device will no longer be activated.

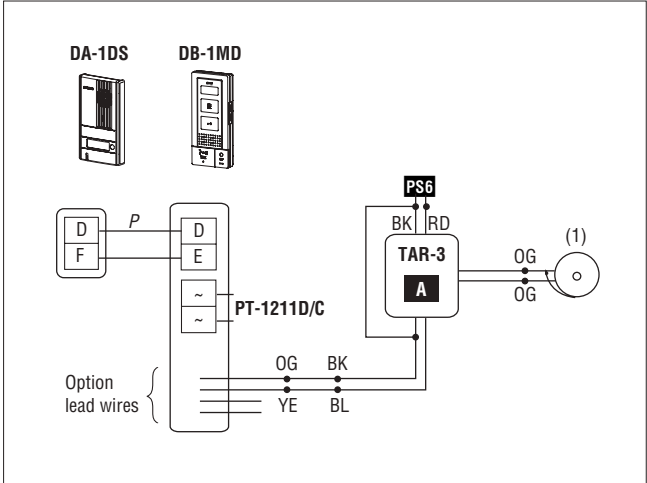
Used for

- DB-1MD
- IE chime tone
- IE-8MD
- KC, KB series
- AT-406
- TB-SE(TC-M)

Unit dimensions



Wiring



(1) Bell, etc. PWR : Power source  
BL : Blue BK : Black(-) RD : Red(+) OG : Orange YE : Yellow  
PS6 : PS-0602D, PS-0602C

Specifications (TAR-3)

|  |                                       |
|--|---------------------------------------|
| Power source   | 6V DC, supplied by PS-0602D, PS-0602C |
| Contact rating   | 0.3A, 240V AC<br>1.0A, 24V DC         |
| Doorbell or buzzer must be AC operated or DC mechanical type only. |                                       |



# Hands-free Color Video BUS Apartment System

## GH System

The GH system is Hands-free Color video apartment system employing 1pair for Audio & 1pair for video connections. The resident can easily identify visitors by crisp "Color image" together with convenient "Hands-free communication." The GH system configures basically two systems: Standard 48-station, Expanded 500-station systems. Apartment station is selectable out of three types: Color monitor hands-free station (w/optional handset), B&W monitor hands-free station, and hands-free audio station. Entrance station is of a fully modular design with vandal-resistant zinc die-cast panel. The GH system is totally flexible, allowing you to mix-and-match components to create the exact system configuration and features needed for each application.

### Capacity

Standard

**48**

Expanded

**500**

### Apartment station

- Identify visitors by crisp "COLOR" image
- Convenient "Hands-free communication"
- Up to 4 apartment stations can be linked per Residence (max. 2 monitor stations)
- Monitoring an Entrance camera from Apartment monitor station
- Add an external signaling device to Apartment station
- Call tone off at individual station with LED indicator
- Doorbell at individual door
- Auto-Entry (Doctor call)
- User-optional feature using SERVICE button, such as turning on/off light, elevator control, etc.
- Panic call transfer to security guard station

MULTI-UNIT ENTRY SECURITY

**COLOR**



Color monitor hands-free station

**SLEEK DESIGN**  
**Slim & Compact**



B&W monitor hands-free station



Audio hands-free station



Color monitor hands-free station with optional handset

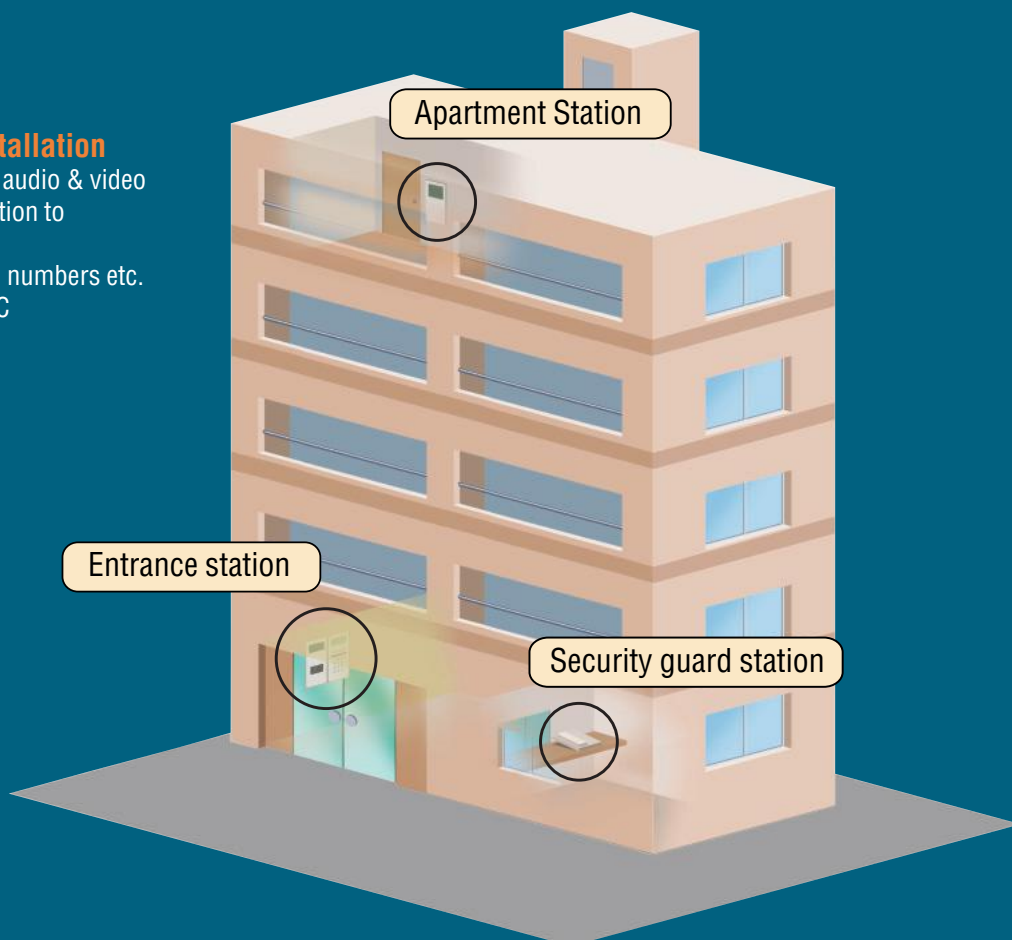


\* The design and specifications are subject to change without notice for improvement.



### Simple and easy installation

- Two single-pair BUS for audio & video
- Easily links Entrance station to Apartment station
- Resident names & room numbers etc. are programmable by PC



### Capacity

| Standard | Expanded |
|----------|----------|
| 5        | 16       |

**Entrance station**

- Vandal-resistant zinc die-cast panel
- Sleek & compact semi-flush design
- Digital name scrollings
  - Search resident names and room numbers using keypad
  - Customer programmable welcome messages
  - Names & welcome messages are selectable from 5 different languages (English, French, Spanish, German & Dutch)

### Capacity

| Standard | Expanded |
|----------|----------|
| 2        | 4        |

**Security guard station**

- Communicate with all residents and Entrance stations
- Receive all Entrance station call-in (Reception mode function)
- Absence call-in memory stored with Callback
- Receive panic calls from Apartment stations



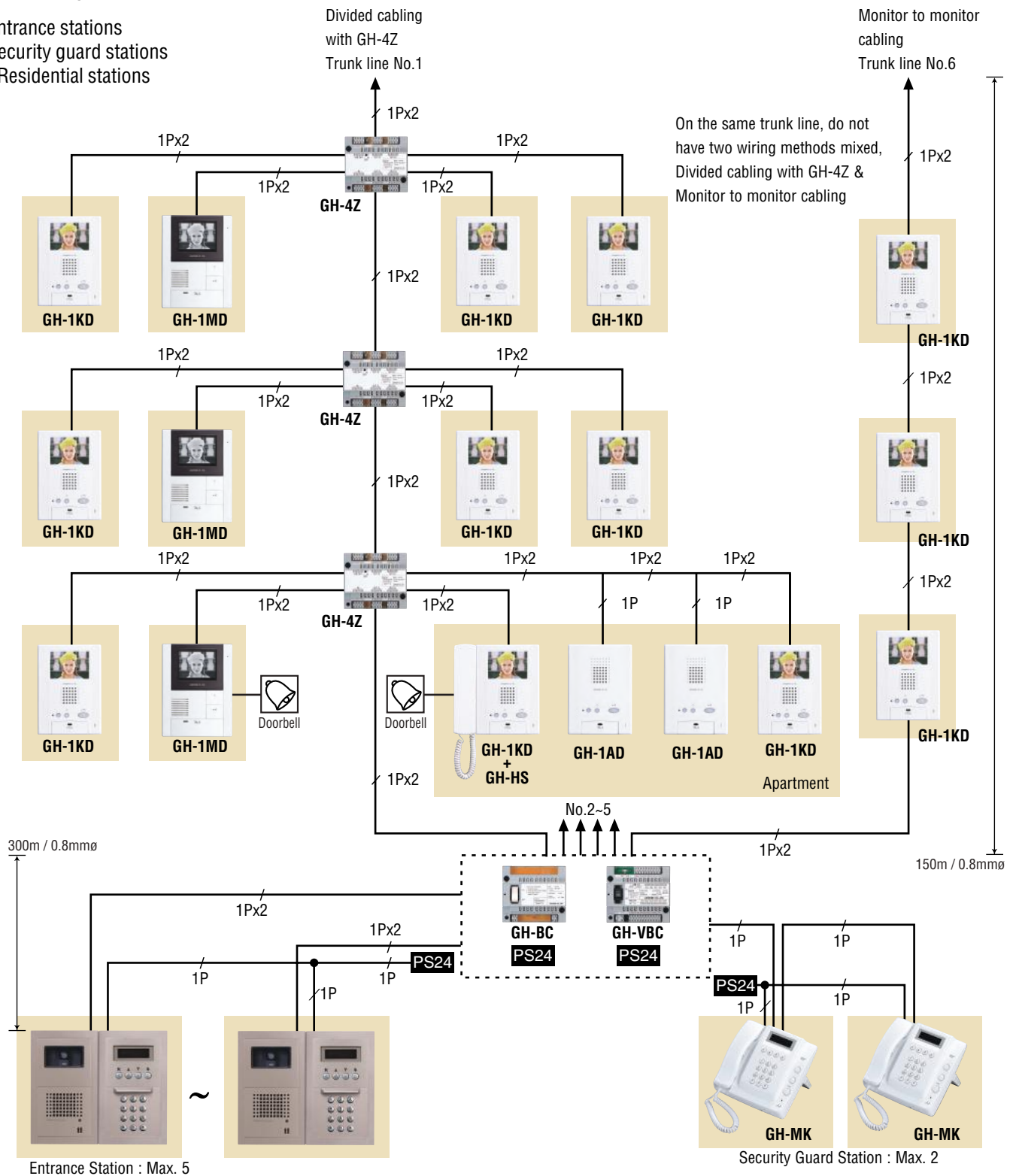


# Hands-free Color Video Bus Apartment System

## System Configuration

### Standard system

5 Entrance stations  
2 Security guard stations  
48 Residential stations

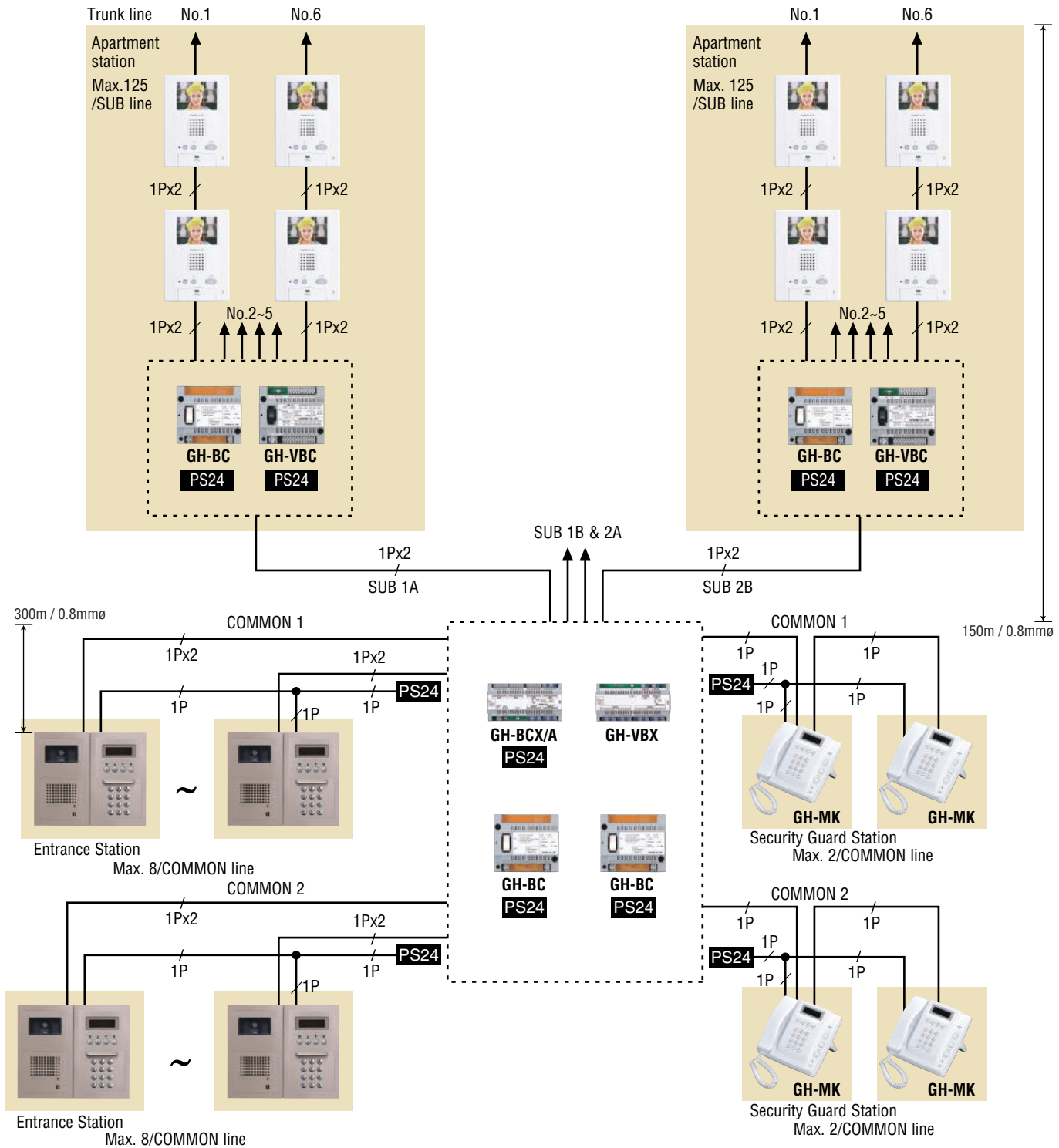


Wiring distance: Entrance station - Bus & Video control unit 300m  
Video control unit - Farthest Video Apartment station 150m  
(Expandable with additional Video control unit)  
Bus control unit - Farthest Audio Apartment station 300m  
Accumulated total Audio wiring distance 2,500m



## Expanded system

16 Entrance stations, 2 common trunk lines (8 each per common line)  
 4 Security guard stations, 2 common trunk lines (2 each per common line)  
 500 Residential stations, 4 sub trunk lines (125 each per sub trunk line)



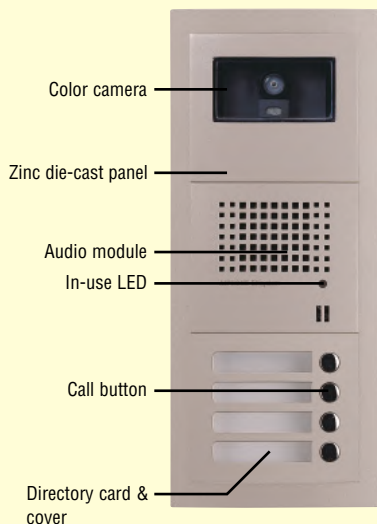
Wiring distance: Entrance station - Expanded Bus & Expanded Video control unit 300m  
 Expanded Video control unit - Farthest Video Apartment station 150m  
 (Expandable with additional Video control unit)  
 Expanded Bus control unit - Farthest Audio Apartment station 300m  
 Accumulated total Audio wiring distance 2,500m/SUB line



# Hands-free Color Video Bus Apartment System

## Entrance station

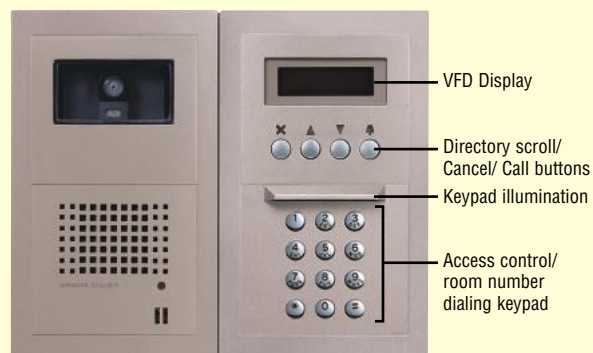
### Direct-select call button



The directory button panels back-lit display illuminates resident's name or unit number



### Digital name scrolling



#### Audio Module



**GH-DP**  
Audio panel



**GH-DA/A**  
Audio module

#### Digital name scrolling module

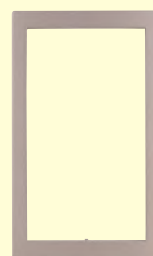


**GF-NSP**  
Display module panel

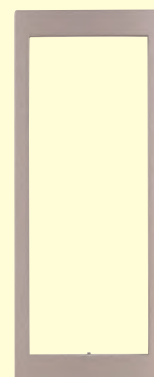


**GH-NS**  
Digital name scroll display module

#### Front frame & back box



**GF-2F**  
2-module front frame



**GF-3F**  
3-module front frame

#### Camera Module



**GF-VP**  
Camera panel



**GH-VA**  
Camera module



**GF-10KP**  
10-key module panel



**GH-10K**  
10-key module

#### Call switch Module



**GF-1P**  
1-call panel



**GF-2P**  
2-call panel



**GF-3P**  
3-call panel



**GF-4P**  
4-call panel



**GH-SW**  
Call switch module



**GF-2B**  
2-module back box



**GF-3B**  
3-module back box

#### Option



**GF-AP**  
Address panel



**GH-AD**  
Address module



**GF-BP**  
Blank panel

#### Access control keypad module



**GF-AC**  
Access control keypad module



- Searches of resident names and room number using the keypad
- Customer programmable welcome messages can also be shown in 5 different languages (English, French, German, Spanish & Dutch)
- White LED illuminator turns on in low-light conditions



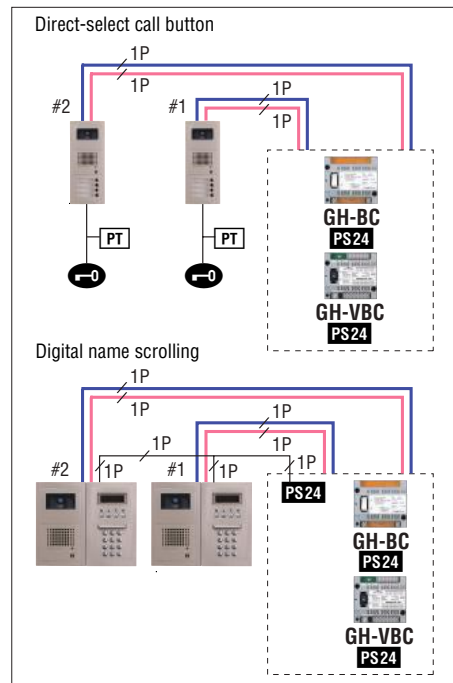
**GF-nHA**  
Rain hood



**GF-nHBA**  
Hooded surface-mount box

**GF-nBA**  
Surface-mount box

### System layout example



### Specifications (GH-DA/A, GH-VA)

|               |   |
|---------------|---|
| Wiring        | Two single-pair cable common  |
| Type of cable | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia. |
| Mounting      | Box and front frame GF-2B,3B and GF-2F,3F   |
| Housing       | Fire-retardant plastic  |

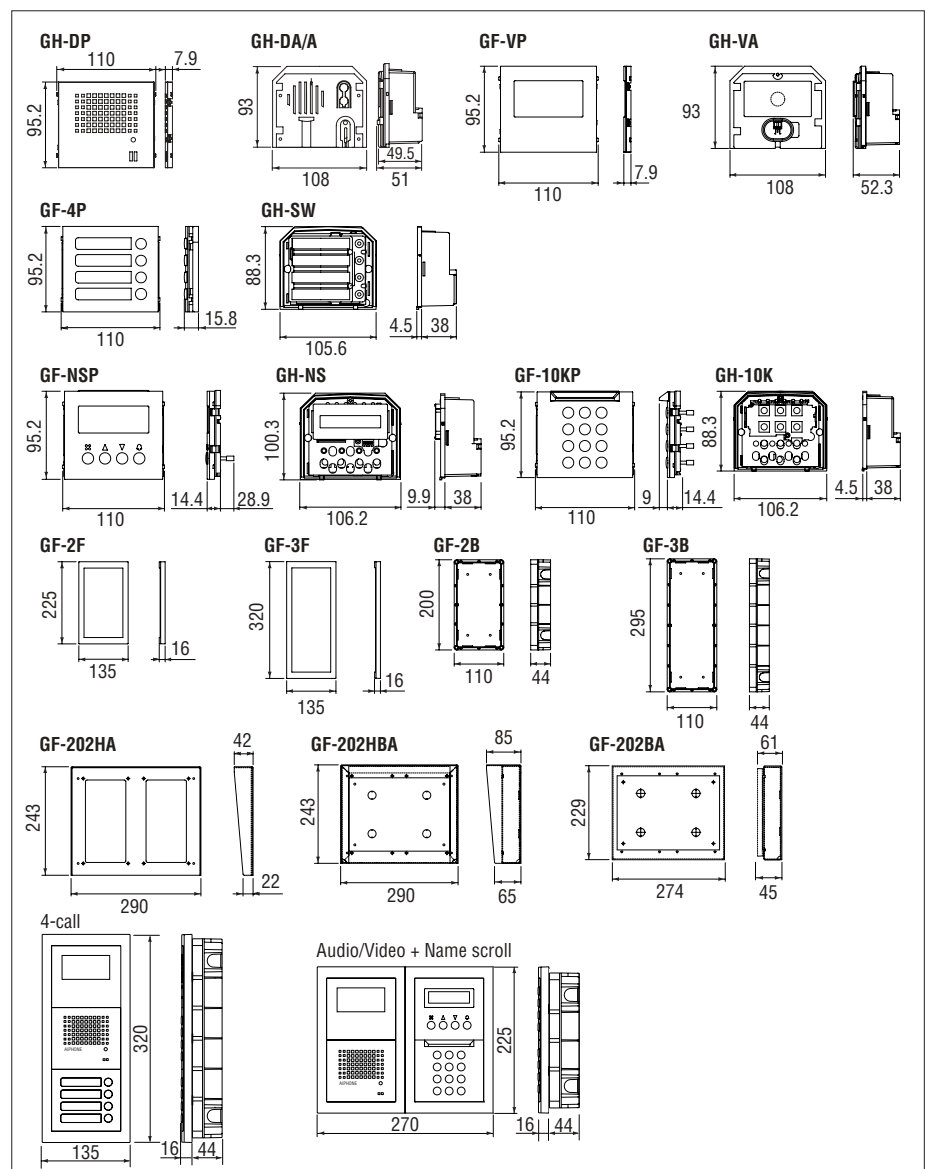
### Specifications (GH-SW, GH-10K, GH-AD)

|          |                        |
|----------|------------------------|
| Lighting | Yellow LED             |
| Housing  | Fire-retardant plastic |

### Specifications (GH-NS)

|              |                                   |
|--------------|-----------------------------------|
| Power source | 24V DC, supplied by PS-2410LD, LC |
| Housing      | Fire-retardant plastic            |

### Unit dimensions





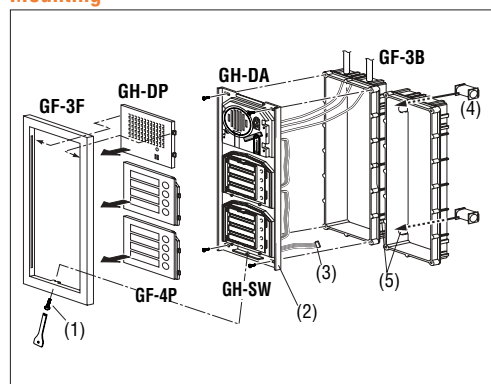
# Hands-free Color Video Bus Apartment System

## Entrance station components

| Number of calling button |                                      | 4.               | 8.               | 12.              | 16.              | 20.              | 24.              | 25.~48.   | GH-NS, GF-10K    |
|--------------------------|--------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|---|------------------|
|                          |                                      |                  |                  |                  |                  |                  |                  |   |                  |
| (1)                      | GH-VA<br>GF-VP                       | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           | For more than<br>7 x GH-SW, install<br>additional power<br>supply & special<br>device required.<br>Contact local<br>AIPHONE distributor | 1<br>1           |
| (2)                      | GH-DA<br>GH-DP                       | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           | 1<br>1           |   | 1<br>1           |
| (3)                      | GH-SW<br>GF-4P                       | 1<br>1           | 2<br>2           | 3<br>3           | 4<br>4           | 5<br>5           | 6<br>6           |   | —<br>—           |
| (4)                      | GF-2F<br>GF-2B                       | —<br>—           | 2<br>2           | —<br>—           | —<br>—           | —<br>—           | —<br>—           |   | 2<br>2           |
| (5)                      | GF-3F<br>GF-3B                       | 1<br>1           | —<br>—           | 2<br>2           | 2<br>2           | 3<br>3           | 3<br>3           |   | —<br>—           |
| (6)                      | GF-BP<br>GH-AD<br>GF-AP              | —<br>—<br>—      | —<br>—<br>—      | —<br>1<br>—      | —<br>—<br>—      | 1<br>1<br>—      | 1<br>—<br>—      |   | —<br>—<br>—      |
| (7)                      | GH-NS<br>GF-NSP<br>GH-10K<br>GF-10KP | —<br>—<br>—<br>— | —<br>—<br>—<br>— | —<br>—<br>—<br>— | —<br>—<br>—<br>— | —<br>—<br>—<br>— | —<br>—<br>—<br>— |   | 1<br>1<br>1<br>1 |

(1) Camera (2) Audio (3) Call switch (4) 2-module Front frame (5) 3-module Front frame (6) Option (7) Digital name scroll

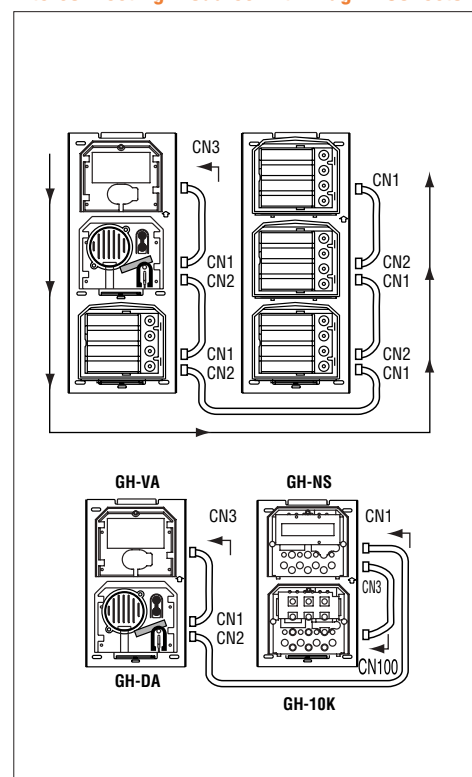
## Mounting



(1) Tamper-proof screw & screwdriver (supplied with GH-BC) (2) Module-mounting bracket (supplied with GF-3F) (3) Internal wiring connector (4) Joint pipe(x2) (5) Cut out openings in advance.

|              |         |          |         |        |    |
|--------------|---------|----------|---------|--------|----|
| GF-nHA       |         | GF-nHBA  |         | GF-nBA |    |
| W            | 42      | W        | 85      | W      | 61 |
| H            | 22      | H        | 65      | H      | 45 |
|              |         |          |         |        |    |
|              | H       |          | H       |        | H  |
|              | W       |          | W       |        | W  |
| GF-102HA/HBA | 243 155 | GF-102BA | 229 139 |        |    |
| GF-202HA/HBA | 243 290 | GF-202BA | 229 274 |        |    |
| GF-103HA/HBA | 338 155 | GF-103BA | 324 139 |        |    |
| GF-203HA/HBA | 338 290 | GF-203BA | 324 274 |        |    |
| GF-303HA/HBA | 338 425 |          |         |        |    |

## Interconnecting Modules with Plug-in Connectors



## Back box

|    |     |        |    |     |        |    |          |      |
|----|-----|--------|----|-----|--------|----|----------|------|
| 1. | (1) | 200 mm | 2. | (1) | 295 mm | 3. | GF-2B/3B | W    |
|    | (2) | 44 mm  |    | (2) | 44 mm  |    | x 1      | 110  |
|    |     |        |    |     |        |    | x 2      | 245  |
|    |     |        |    |     |        |    | x 3      | 380  |
|    |     |        |    |     |        |    | x 4      | 515  |
|    |     |        |    |     |        |    | x 5      | 650  |
|    |     |        |    |     |        |    | x 6      | 785  |
|    |     |        |    |     |        |    | x 7      | 920  |
|    |     |        |    |     |        |    | x 8      | 1055 |
|    |     |        |    |     |        |    | x 9      | 1190 |

1. Two 2-module back boxes 2. Three 3-module back boxes 3. Back box total width (mm)

(1) Joint pipe(x2) (2) Do not recess back box more than 15mm.

## Adjust camera angle

• Viewing from initial camera position

95cm\*

65cm\*

GH-VA

65cm\*

50cm

• Changing camera angle

GH-VA

GH-VA

1. Open the rubber cap.

2. Change the camera angle with the lever

\*Do not forget to replace the cap.

\* approximate

• Image view area

Camera center

GH-VA

50cm

24cm\*

113cm\*

24cm\*

113cm\*

When adjusted to the left

When adjusted to the right



## Residential station



**GH-1KD**

(white)

Color monitor apartment station



**GH-1KDS**

(silver)



**GH-1MD**

B&W monitor apartment station



**GH-1AD**

Audio apartment station



**GH-HS**

Option handset for GH-1KD

### Features

- Selectable 3 types of stations (Color monitor, B&W monitor, or Audio only)
- Hands-free communication, auto-voice actuation
- Press-talk operation available
- Max. 4 apartment stations can be linked per Residence (max. 2 monitor stations)
- Monitoring a Video entrance station (audio & video)
- Call tone cutout with LED indicator
- Security guard call
- Additional handset available for GH-1KD
- Option

External signaling device to Apartment station (w/GH-RY)

Doorbell at individual door with different call tone

Auto-Entry (Doctor call), door strikes automatically opens by pressing the Call button at the entrance station. (Not available to use together with entrance light feature)

-Panic call, call an Emergency to the Security guard station(s) by panic call button

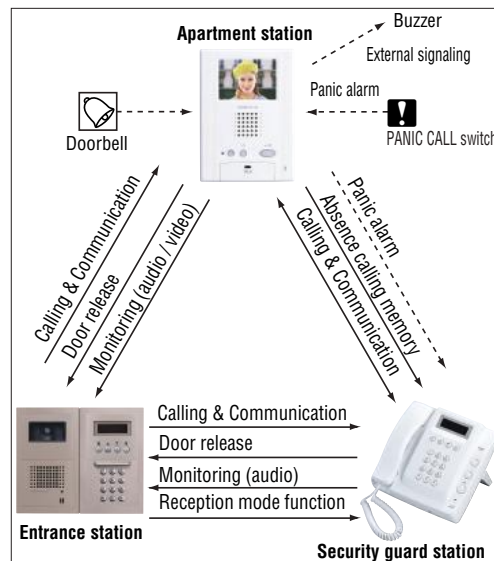
User-optional device can be controlled with SERVICE button, such as

-Light on and off at entry way to elevator

-Elevator control, goes down to the ground floor or up to resident floor

Not available GH-1MD

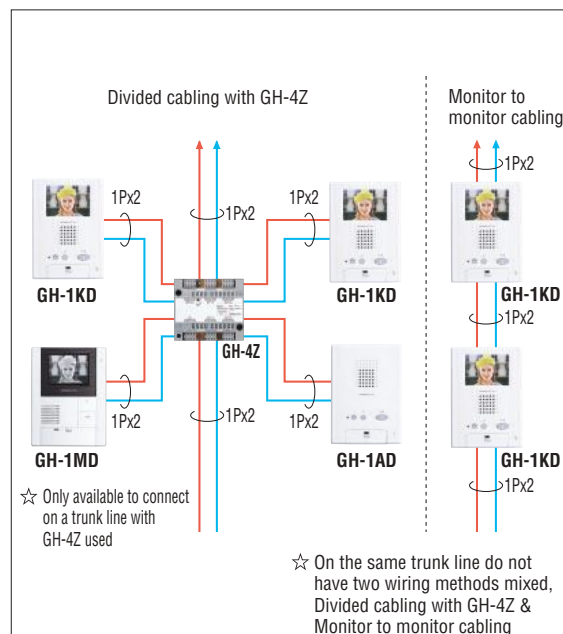
### Functions



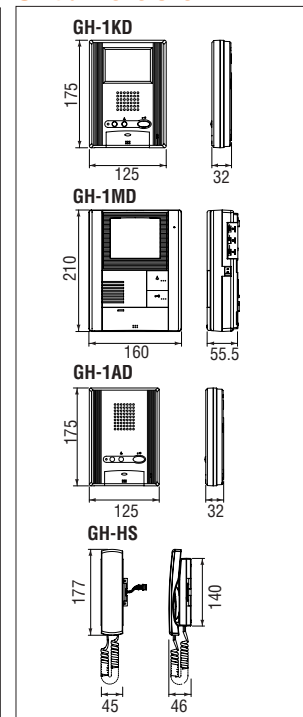
### Specifications (GH-1KD, GH-1MD, GH-1AD)

|               |   |
|---------------|---|
| Power source  | 24V DC, supplied from Bus control units, GH-BC & GH-VBC                           |
| Video monitor | GH-1KD: 3.5 inch color LCD<br>GH-1MD: 4 inch B&W CRT                              |
| Wiring        | GH-1KD, GH-1MD: Two Single-pair cables common<br>GH-1AD: Single-pair cable common |
| Mounting      | Wall-mounting only  |
| Housing       | Fire-retardant plastic  |

### Trunk line



### Unit dimensions





# Hands-free Color Video Bus Apartment System

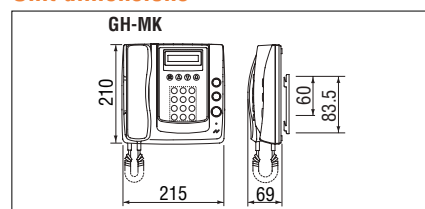
## Security guard station



### Features

- Call to residential station
- Digital display shows name of resident & room number
- Monitoring a Video entrance station (audio)
- Receive all Entrance station call-ins (Reception mode function)
- Absence call-in memory stored with Callback
- Option
  - Doorbell at door with different call tone
  - User-optional device can be controlled with SERVICE button, such as
    - light on and off at entry way to elevator
- Receive a Panic call from apartment station

### Unit dimensions



### Specifications (GH-MK)

|               |   |
|---------------|---|
| Power source  | 24V DC, supplied by PS-2410LD, PS-2410LC  |
| VFD display   | Max. 16 letters for names; English, French, German, Spanish & Dutch                           |
| Wiring        | 2 single-pair cables  |
| Type of cable | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia. |
| Mounting      | Wall-mounting or Desk-top mounting on GFW-S   |
| Housing       | Fire-retardant plastic  |

## Control units



**GH-BC**  
Bus control unit

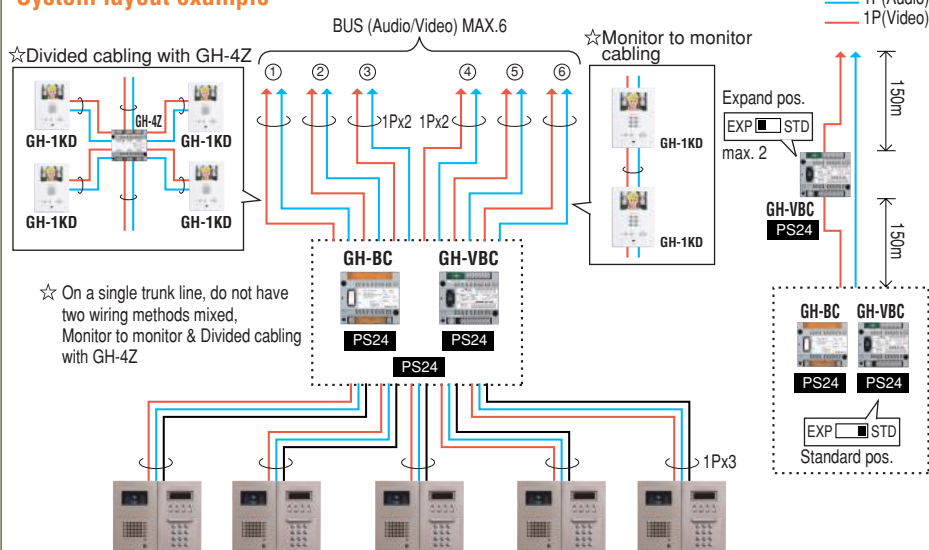


**GH-VBC**  
Video Bus control unit,  
expander video control



**GH-4Z**  
Video 4-zone divider

### System layout example



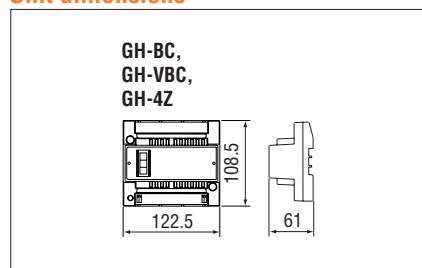
### Wiring distance

|  | Distance (Diameter of wires)                                      |
|--|---|
| GH-BC, GH-VBC to Farthest Entrance station             | 300m(0.8mm)   |
| GH-BC, GH-VBC to Farthest Video apartment station      | 150m(0.8mm) Expandable 150m with additional GH-VBC & Power supply |
| GH-BC, GH-VBC to Farthest Audio apartment station      | 300m(0.8mm)   |
| GH-BC, GH-VBC to each Power supply                     | 5m(0.8mm)   |
| GH-RY to Entrance station                              | 300m(0.8mm)   |
| Accumulated Audio lines (R1, R2) Total wiring distance | 2,500m(0.8mm)   |

### Type of Cable

2-conductor cables solid copper & non-braided, polyethylene insulation, 0.65mm ~ 1.0mm dia.

### Unit dimensions



### Specifications (GH-BC, GH-VBC)

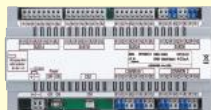
|              |  |
|--------------|--|
| Power source | 24V DC, supplied by PS-2410LD, PS-2410LC |
| Consumption  | 900mA.                                   |
| Wiring       | Single-pair cable common                 |
| Housing      | Fire-retardant plastic                   |

### Specifications (GH-4Z)

|          |                               |
|----------|-------------------------------|
| Wiring   | Two Single-pair cables common |
| Mounting | DIN rail                      |
| Housing  | Fire-retardant plastic        |



# Expanded control units



**GH-BCX/A**  
Expanded Bus control unit

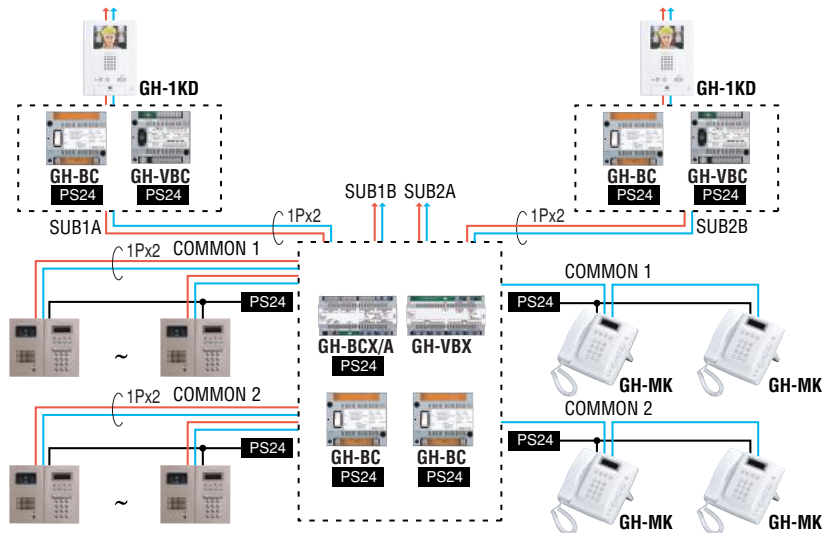


**GH-VBX**  
Expanded video control unit

## Features

- Expandable to max. 500 Apartment stations, 16 Entrance stations, and 4 Security guard stations

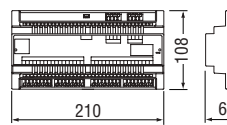
## System layout example



- COMMON trunk line: Requires one each of GH-BC & Power supply
- COMMON trunk line: Max. 8 Entrance stations & 2 Security guard stations
- SUB COMMON trunk line: Max. 125 Apartment stations

## Unit dimensions

### GH-BCX/A, GH-VBX



## Specifications (GH-BCX/A, GH-VBX)

|              |  |
|--------------|--|
| Power source | GH-BCX/A: 24V DC, supplied by PS-2410LD, PS-2410LC. GH-VBX: Supplied from GH-BCX/A |
| Wiring       | Single-pair cable common   |
| Mounting     | DIN rail   |
| Housing      | Fire-retardant plastic   |

# Power supply

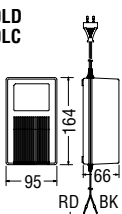


**PS-2410LD**

**PS-2410LC**

## Unit dimensions

### PS-2410LD PS-2410LC



RD : Red, BK : Black

## Specifications

|                                    |             |            |
|------------------------------------|-------------|------------|
| Power supply                       | PS-2410LD   | PS-2410LC  |
| Power source                       | 220-240V AC | 120V AC    |
| Secondary output voltage & current | 24V DC, 1A  | 24V DC, 1A |

# Option



**GH-RY**  
External signaling relay  
entrance light, external buzzer



**W-DIN11**  
DIN mounting rail  
for GH-BC, GH-VBC, GH-4Z



**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99



# Hands-free Color Video Bus Apartment System

## GH Lift control adaptor



**GHW-LC**  
Lift control adaptor

### Features

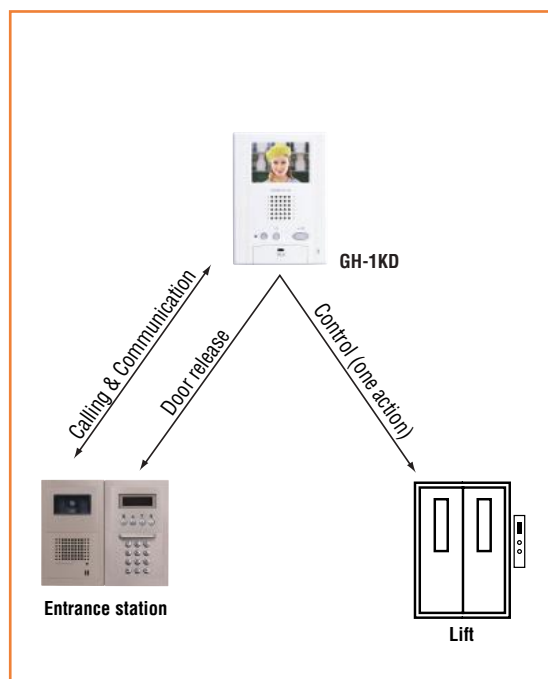
- Lift is controllable from apartment station while communicating with entrance station.
- When door release button is pressed, electric door strike is activated and simultaneously output signal is transmitted to the lift controller or the access controller. The access is authorised only to the floor of communicated apartment station.

- Selectable dry contact: Normally Open or Normally Closed

- System set up data is programmable on your PC

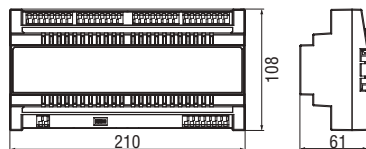
\* GH-BCX/A & GH-DA/A is required to use GHW-LC.

### Functions



### Unit dimensions

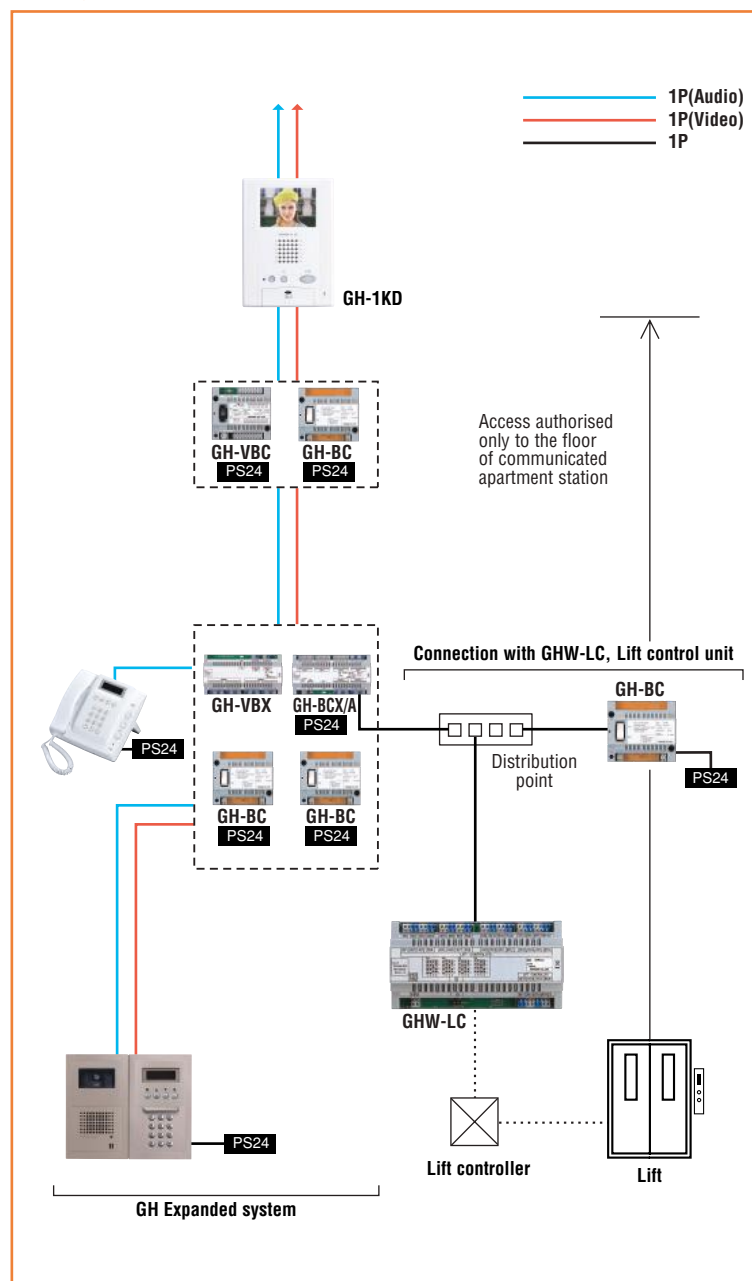
**GHW-LC**



### Specifications

|              |                                      |
|--------------|--------------------------------------|
| Power source | Supplied by GH-BC                    |
| Relay        | Output 20                            |
|              | Contact rating 24V AC/DC, 0.5A       |
|              | N/O or N/C dry contact               |
|              | Operating time From 1 to 600 seconds |
| Wiring       | Single-pair cable                    |
| Mounting     | DIN rail                             |
| Housing      | Fire-retardant plastic               |

### Cabling



PS24 : PS-2410LD, PS-2410LC



## GH CCTV camera interface adaptor for Reception

### Features

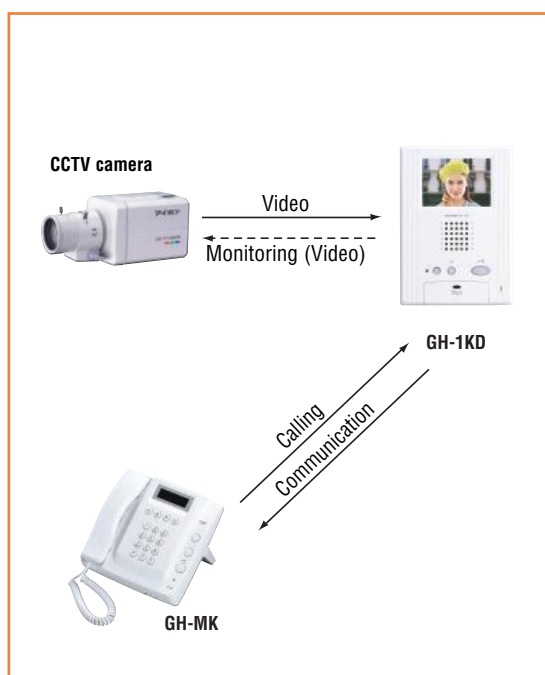
Tenant can receive a call from concierge with visitor's picture image through CCTV camera.

In luxurious condominium, concierge receives all visitors directly instead of using the entrance station. In case concierge asks the tenant to verify the visitors, GH-CCTV allows GH-MK to call apartment station with the image from CCTV transferred. The tenant can communicate with concierge while the picture of visitor displayed at the apartment station. Monitoring the CCTV camera is also available from the apartment station.

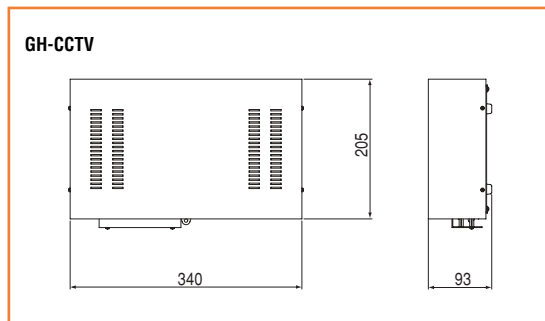


**GH-CCTV**  
CCTV camera interface  
adaptor for Reception

### Functions



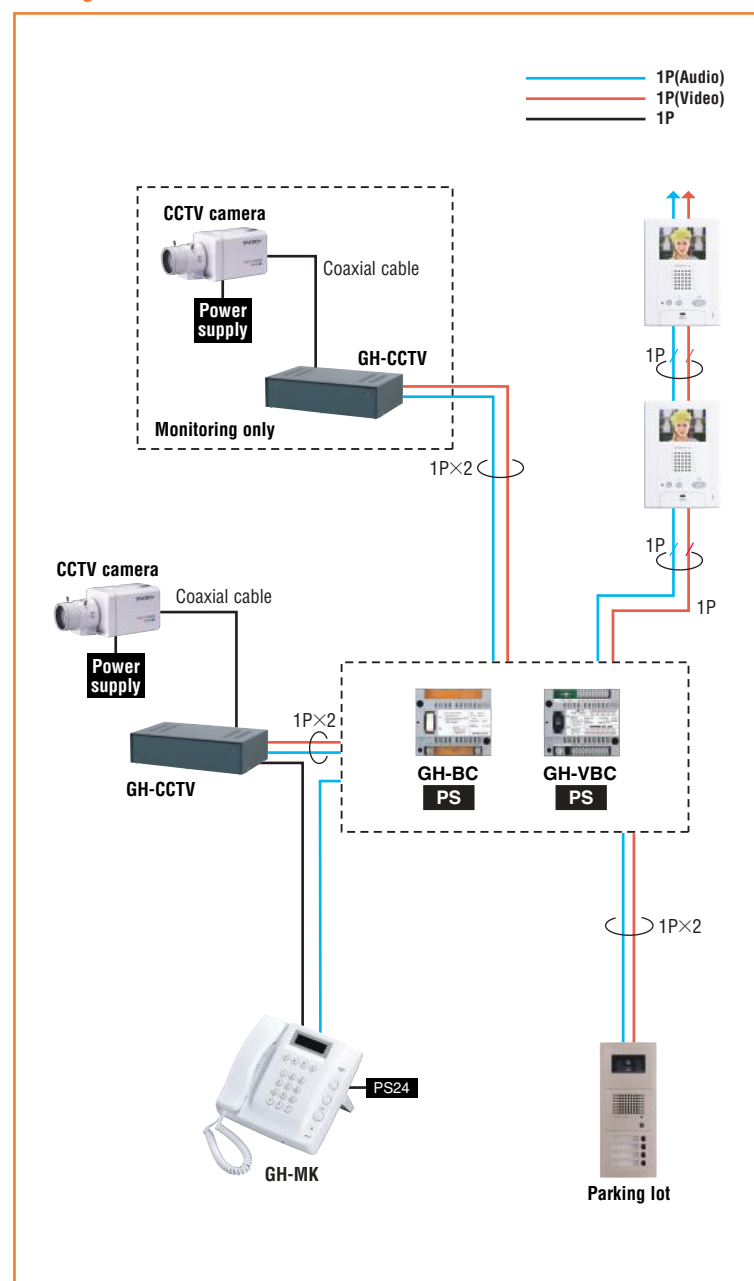
### Unit dimensions



### Specifications

|              |                            |
|--------------|----------------------------|
| Power source | Supplied by GH-BC & GH-VBC |
| Video signal | NTSC 1V P-P                |
|              | 75Ω                        |
| Mounting     | Desk-top or wall-mounting  |

### Cabling



PS24 : PS-2410LD, PS-2410LC



# Hands-free Color Video Bus Apartment System

## Cabling

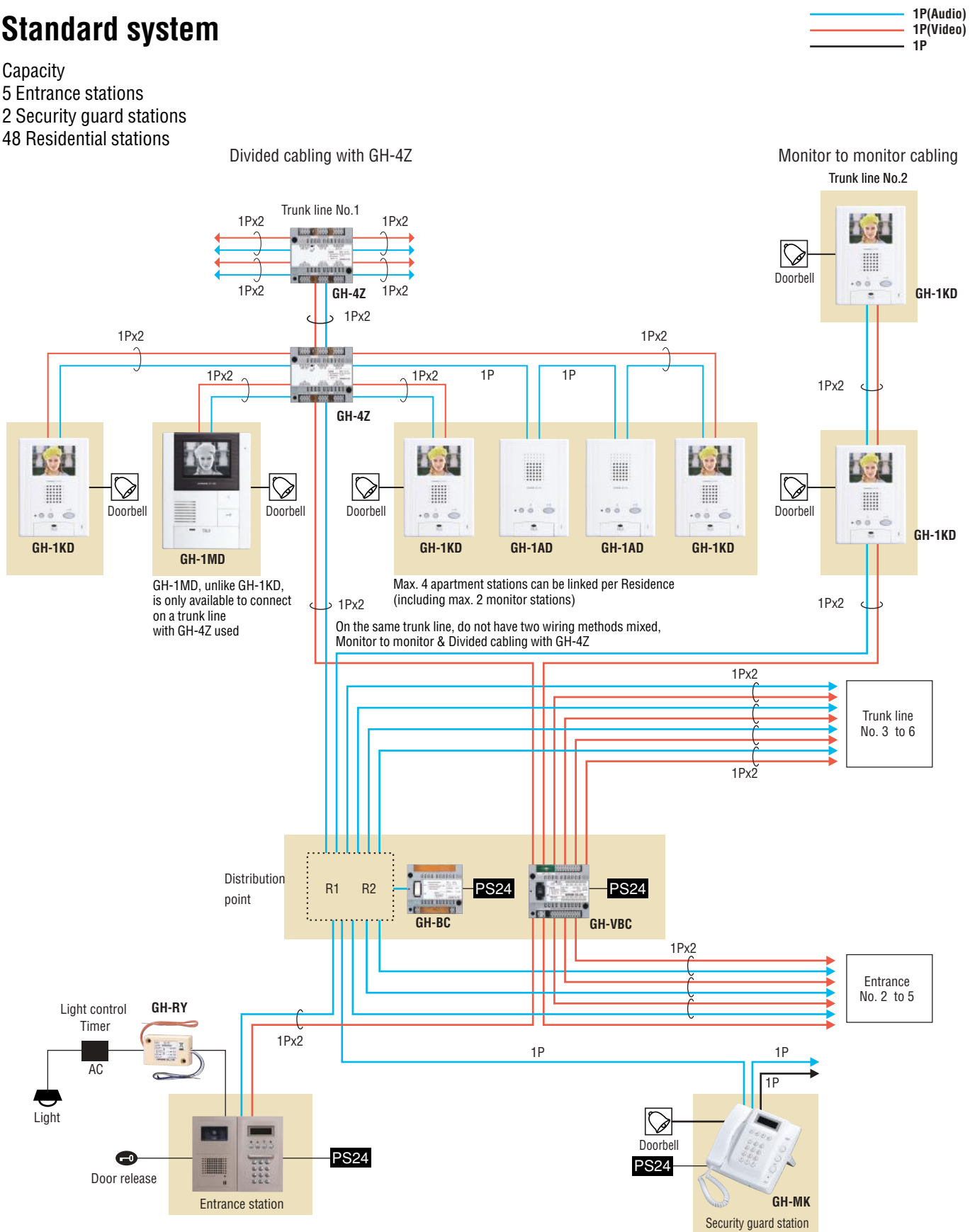
## Standard system

## Capacity

5 Entrance stations

## 2 Security guard stations

48 Residential stations

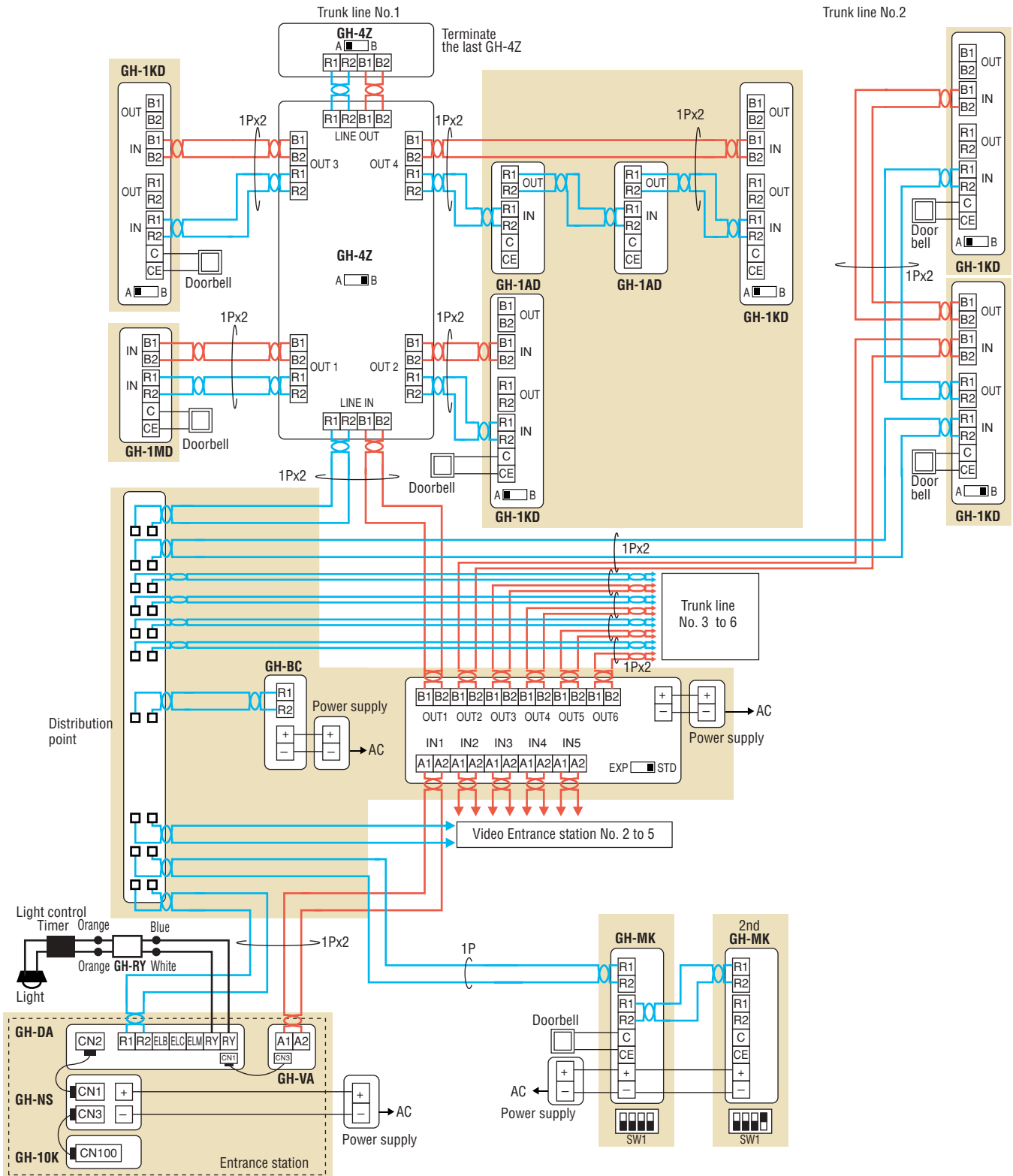


Cable: 1P x 2, 2-conductor cable solid copper & non-braided, polyethylene insulation



## Divided cabling with GH-4Z

## Monitor to monitor cabling

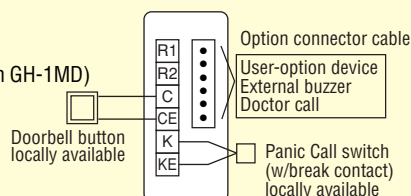


Apartment station and Security guard station have following options

### GH-1KD, GH-1MD, GH-1AD

- Doorbell
- Panic alarm switch
- User-optional device\* (not available with GH-1MD)
- External buzzer\* (used w/GH-RY)
- Doctor call\*

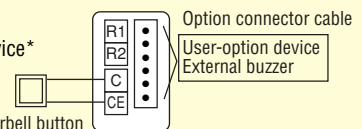
\*Option connector cable is required.  
Contact local AIPHONE distributor



### GH-MK

- Doorbell
- User-optional device\*
- External buzzer\* (used w/GH-RY)

\*Option connector cable is required.  
Contact local AIPHONE distributor





# Two-Wire Bus System

ENTRANCE

5

RESIDENCE

100 or 250

# GF Audio

## Entrance station

- Direct-select Call Button



Audio, 4-call



Audio, 16-call with address panel

- Digital Name Scrolling



Audio, Digital keypad, LCD Directory & address panels

## Frame & Box

Assemble the following in as many rows as required.

**GF-2F** 2-module Front frame

**GF-2B** 2-module Back box

**GF-3F** 3-module Front frame

**GF-3B** 3-module Back box

→P.52

## Entrance station modules

- Audio Module



**GF-DP**  
Audio panel  
→ P.51



**GF-DA**  
Audio module  
→ P.51

- Access control keypad module



**GF-AC**  
Access control  
keypad module  
→ P.51

- Direct-Select Keys



**GF-1P**  
1-call panel  
→ P.51



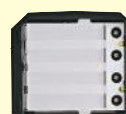
**GF-3P**  
3-call panel  
→ P.51



**GF-2P**  
2-call panel  
→ P.51



**GF-4P**  
4-call panel  
→ P.51



**GF-SW**  
Call switch module  
→ P.51

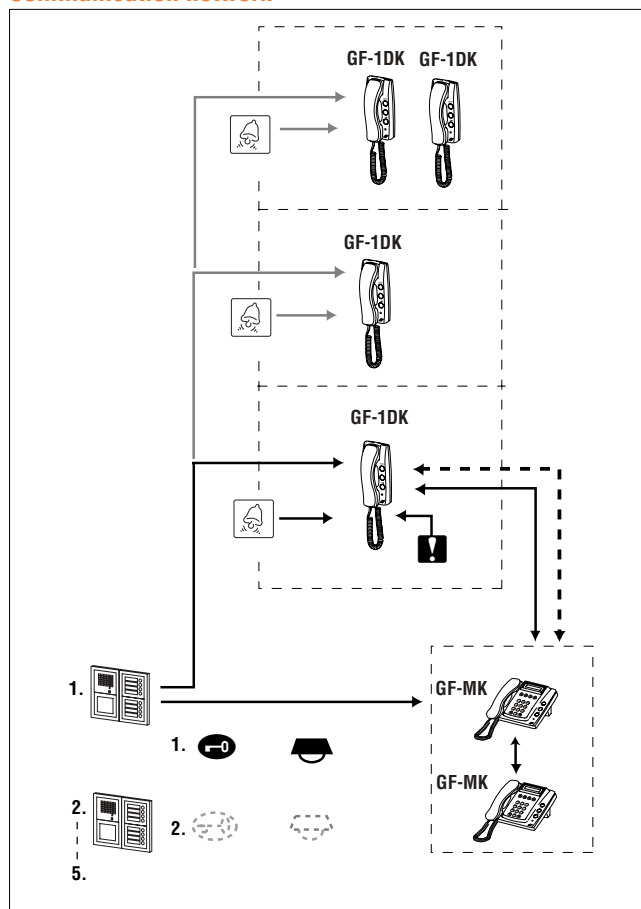
## Features

- Fully modular Entrance station. Vandal-resistant construction
- Two-wire Bus throughout system
- One or two apartment stations
- Call tone off at individual station with blinking LED indicator
- Door release & external light, Bus line-controlled
- User options: Doorbell at individual door. Auto-Entry (auto door strike)
- User-optional feature using SERVICE button

## Capacity

- 1 or 2 apartment stations within a residence
- Entrance station panel : 100-call sized
- Direct-select call button : Total 150 apartment stations incl. second stations
- Digital name scrolling : Total 250 apartment stations incl. second stations

## Communication network



→ Calling & Communication    ↔ PANIC CALL sounding & Answer-back.

GF-MK; Concierge station must be used w/GF-1DK.

🔔 Doorbell    🚪 PANIC CALL switch used for GF-1DK only

Bus line-controlled; 🚪 Door Release    🚪 External light



• Digital Name Scrolling



**GF-NSP**  
LCD directory panel  
→ P.51



**GF-NS**  
LCD directory  
→ P.51



**GF-10KP**  
Digital keypad panel  
→ P.51



**GF-10K**  
Digital keypad  
→ P.51

**Apartment station**



**GF-1D**  
Apartment station  
→ P.53

**GF-1DK**  
Concierge call  
apartment station  
w/Panic call transfer  
Use with GF-MK  
→ P.53

**Concierge station**



**GF-MK**  
Concierge station  
→ P.53

**Bus control unit**



**GF-BC**  
Bus control unit  
→ P.54

**Power supply**



**PS-2410LD**  
→ P.54

**PS-2410LC**  
→ P.54

**Lineup**



**GF-nHA**  
Rain hood  
→ P.52



**GF-nHBA**  
Hooded surface-mount box  
→ P.52



**GF-AP**  
Address panel  
→ P.51

**GF-nBA**  
Surface-mount box



**GF-BP**  
Blank panel  
→ P.51



**GF-AD**  
Address module  
→ P.51

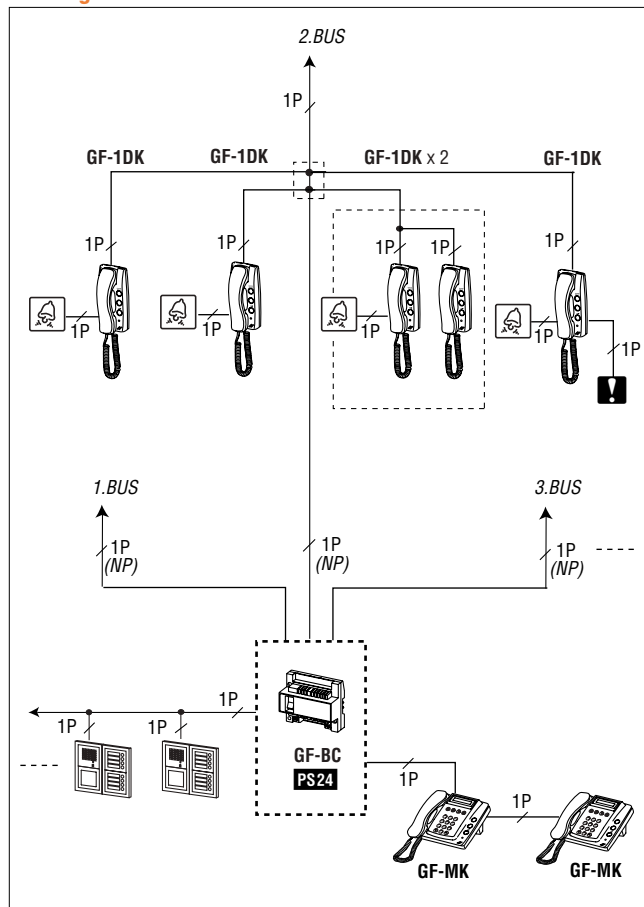


**GFW-LD**  
Long distance adaptor  
→ P.55



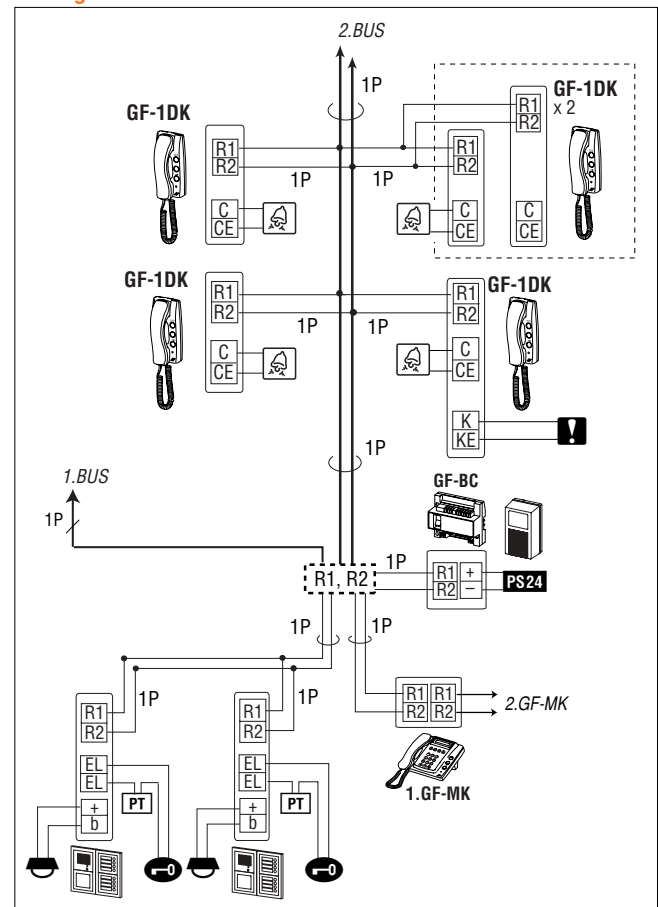
**GFW-S**  
Desk-top stand for GF-MK  
→ P.53

**Cabling**



- Bus line: Any number per system. Max. 50 stations per line.
- 1P, Non-polarized

**Wiring**



- Bus line (MAX.) 50 stations per Line
- K, KE terminals; Mounted on GF-1DK only
- For controlling light at the entrance, use Aiphone's MAW-B, which provides dry closure contact.

**PS24** : PS-2410LD, PS-2410LC



# Four-Wire Common B&W Video System

ENTRANCE

5

RESIDENCE

100or250

## GF Audio/Video

### Entrance station

- Direct-select Call Button



Audio, Camera & Direct-select  
12-call buttons

- Digital Name Scrolling



Audio, Camera & Digital Keypad &  
LCD Directory

### Frame & Box

Assemble the following in as many rows as required.

**GF-2F** 2-module Front frame

**GF-2B** 2-module Back box

**GF-3F** 3-module Front frame

**GF-3B** 3-module Back box

→P.52

### Entrance station modules

- Camera Module



**GF-VP**  
Camera panel  
→ P.51

- Audio Module



**GF-DP**  
Audio panel  
→ P.51

- Direct-Select Keys



**GF-1P**  
1-call panel  
→ P.51



**GF-2P**  
2-call panel  
→ P.51

- Audio Module



**GF-VA**  
Camera module  
→ P.51



**GF-DA**  
Audio module  
→ P.51



**GF-3P**  
3-call panel  
→ P.51



**GF-4P**  
4-call panel  
→ P.51

- Access control keypad module



**GF-AC**  
Access control keypad module  
→ P.51



**GF-SW**  
Call switch module  
→ P.51

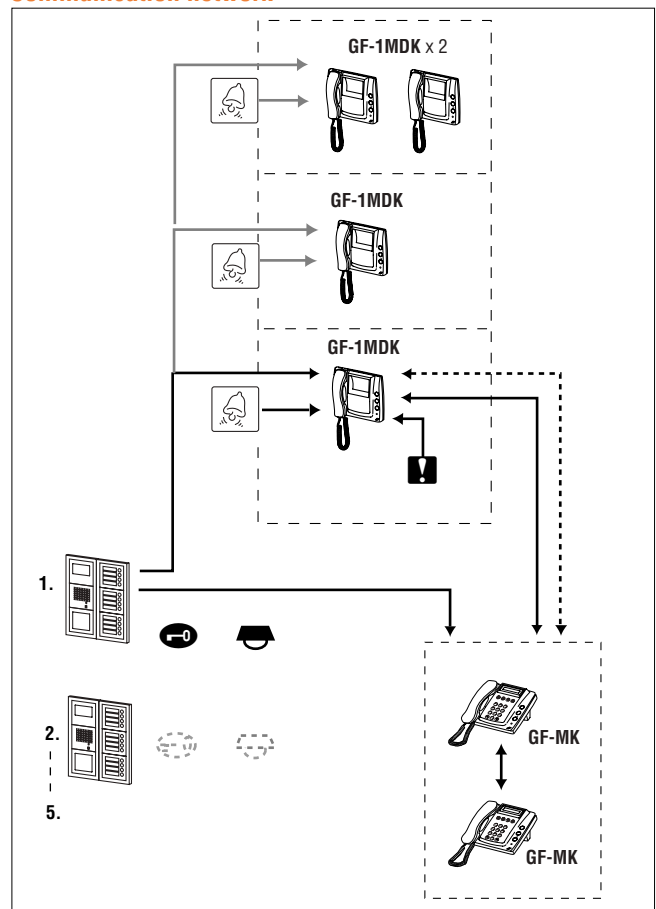
### Features

- Fully modular Entrance station. Vandal-resistant construction
- Two single-pair cables run throughout system
- Second monitor or audio station can be installed
- Call tone off at individual station with blinking LED indicator
- Door release & external light, Bus line-controlled
- Optional functions: Doorbell at individual door. Auto-Entry (auto door strike)
- User-optional feature, using SERVICE button

### Capacity

- 1 or 2 apartment stations within a residence
- Entrance station panel : 100-call sized
- Direct-select call button : Total 150 apartment stations incl. second stations
- Digital name scrolling : Total 250 apartment stations incl. second stations

### Communication network



↔ Callig & communication    ↔ PANIC CALL sounding & Answer-back.

GF-MK; Concierge station must be used w/GF-1MDK.

🔔 Doorbell    ⚡ Panic call switch, available with GF-1MDK only

Bus line-controlled; 🚪 Door Release    💡 Light



• Digital Name Scrolling



**GF-NSP**  
LCD directory panel  
→ P.51



**GF-NS**  
LCD directory  
→ P.51



**GF-10KP**  
Digital keypad panel  
→ P.51



**GF-10K**  
Digital keypad  
→ P.51

**Apartment station**



**GF-1MD-SW**  
Apartment station  
w/Service button  
→ P.53

**GF-1MDK**  
Concierge call apartment  
monitor station  
w/Panic call transfer  
Use with GF-MK  
→ P.53

**Concierge station**



**GF-MK**  
Concierge station  
→ P.53

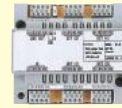
**Bus control unit**



**GF-BC**  
Bus control unit  
→ P.54



**GF-VBC**  
Video control unit  
→ P.54



**GF-4Z**  
4-aprt. Bus junction unit  
→ P.54

**Power supply**



**PS-2410LD**  
→ P.54



**PS-2410LC**  
→ P.54

**Lineup**



**GF-nHA**  
Rain hood  
→ P.52



**GF-nHBA**  
Hooded surface-mount box  
→ P.52



**GF-AP**  
Address panel  
→ P.51



**GF-nBA**  
Surface-mount box



**GFW-S**  
Desk-top stand  
for GF-MK  
→ P.53

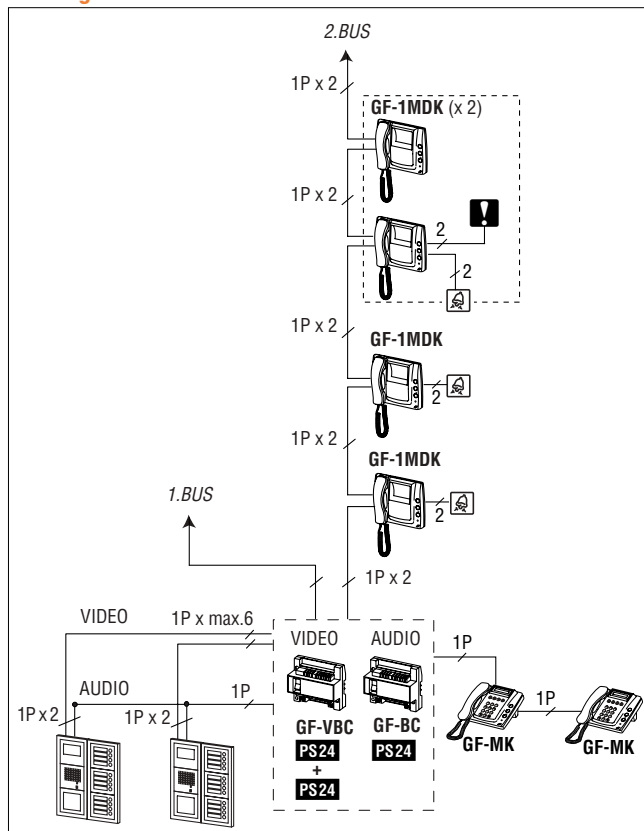


**GF-AD**  
Address module  
→ P.51



**GF-BP**  
Blank panel  
→ P.51

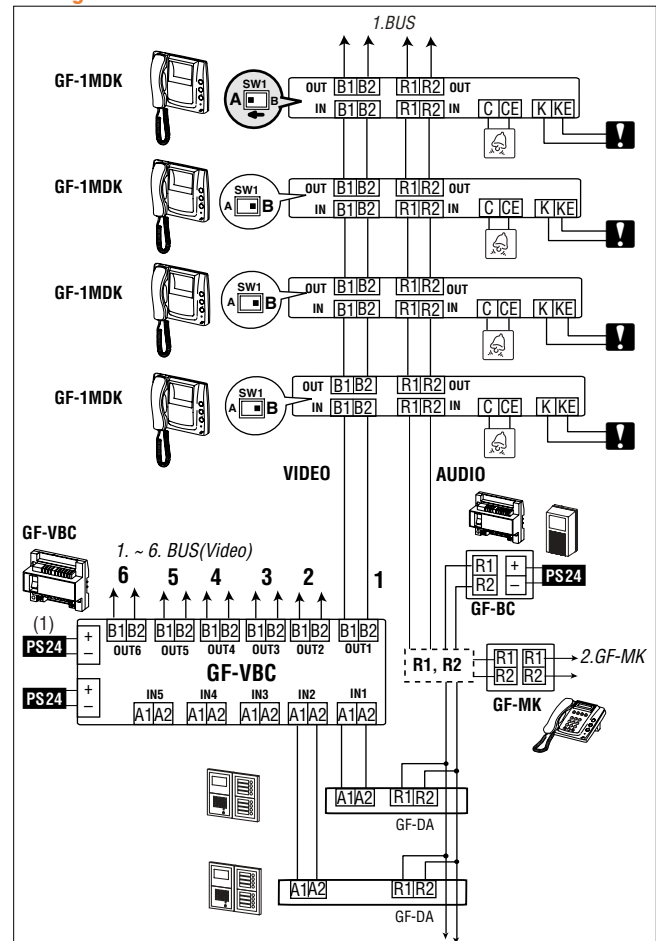
**Cabling**



**Audio/Video trunk lines**

- There are methods of installing audio/video trunk lines, i.e. Monitor-to-Monitor or homerun to GF-4Z's. The two methods may be used within a system. But **do not mix two methods on a same trunk line.**
- BUS (Audio/Video) Line; Up to 6 lines. Two single-pair cables common. Max. 25 Monitors per Line.

**Wiring**



(1) Required when the second GF-1MDK is installed within an apartment.

• K, KE terminals for Panic call switch; GF-1MDK only.

• For controlling light at the entrance, use Aiphone's MAW-B, which provides dry closure contact.

**PS24** : PS-2410LD, PS-2410LC



# Two-Wire Bus System

## Entrance station modules & panels

### Audio Module



**GF-DP**  
Audio panel



**GF-DA**  
Audio module

### Call switch Module



**GF-1P**  
1-call panel



**GF-2P**  
2-call panel



**GF-3P**  
3-call panel



**GF-4P**  
4-call panel



**GF-SW**  
Call switch module

### Camera Module



**GF-VP**  
Camera panel



**GF-VA**  
Camera module

### Digital name scrolling module



**GF-NSP**  
LCD directory panel



**GF-NS**  
LCD directory



**GF-10KP**  
Digital keypad panel



**GF-10K**  
Digital keypad

### Access control keypad module



**GF-AC**  
Access control keypad module

### Lineup



**GF-AP**  
Address panel

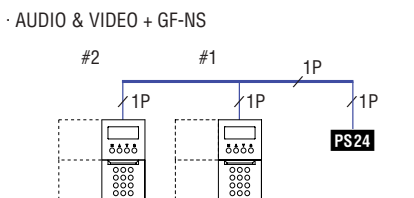
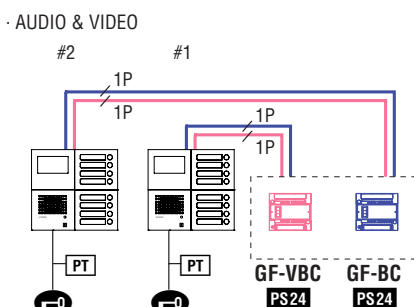
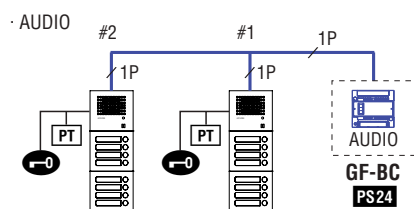


**GF-AD**  
Address module



**GF-BP**  
Blank panel

### System layout example



PS24 : PS-2410LD, PS-2410LC

### Specifications (GF-DA)

|                  |   |
|------------------|---|
| Consumption      | 30mA  |
| Entrance station | 5   |
| Wiring           | Single-pair cable common  |
| Type of cable    | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia. |
| Mounting         | Box and front frame GF-2B,3B and GF-2F,3F   |
| Housing          | Fire-retardant Plastic  |
| Weight           | Approx. 180g  |

### Specifications (GF-SW)

|          |                        |
|----------|------------------------|
| Capacity | 100-call buttons       |
| Lighting | Yellow LED             |
| Housing  | Fire-retardant Plastic |
| Weight   | Approx. 90g            |

### Specifications (GF-VA)

|                  |  |
|------------------|--|
| Consumption      | 140mA  |
| Entrance station | 5  |
| Wiring           | Two single-pair cables common  |
| Type of cable    | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm ~ 1.0mm dia. |
| Housing          | Fire-retardant Plastic   |
| Weight           | Approx. 140g   |

### Specifications (GF-NS)

|               |  |
|---------------|--|
| Power source  | 24V DC, supplied by a power supply PS-2410LD, LC   |
| Consumption   | 0.07A  |
| Wiring        | Two single-pair cables common.   |
| Type of cable | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm ~ 1.0mm dia. |
| Housing       | Fire-retardant Plastic   |
| Weight        | Approx. 150g   |

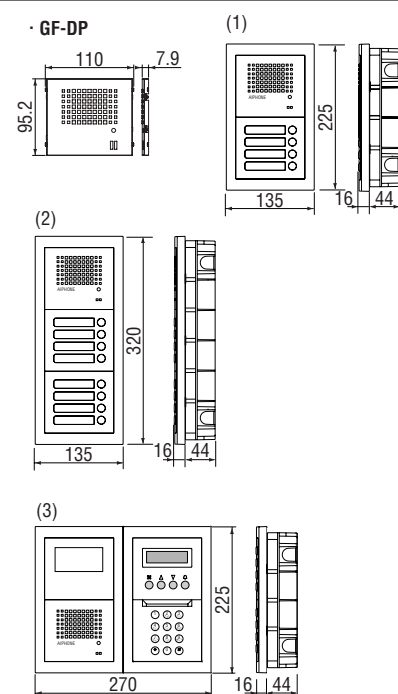
### Specifications (GF-10K)

|          |                        |
|----------|------------------------|
| Housing  | Fire-retardant Plastic |
| Lighting | Yellow LED             |
| Weight   | Approx. 90g            |

### Specifications (GF-AD)

|          |                        |
|----------|------------------------|
| Housing  | Fire-retardant Plastic |
| Lighting | Yellow LED             |
| Weight   | Approx. 90g            |

### Unit dimensions



(1) Audio, 4-call (2) Audio, 8-call (3) Audio/Video + Name scroll



## Entrance station mounting accessories

**Front frame & back box**

**GF-2F**  
2-module front frame

**GF-3F**  
3-module front frame

**GF-2B**  
2-module back box

**GF-3B**  
3-module back box

**GF-nHA**  
Rain hood

**GF-nHBA**  
Hooded surface-mount box

**GF-nBA**  
Surface-mount box

## Mounting

(1) Tamper-proof screw & screwdriver (supplied with GF-BC) (2) Module-mounting bracket (supplied with GF-3F) (3) Internal wiring connector (4) Joint pipe(x2) (5) Cut out openings in advance.

|              | H   | W   |
|--------------|-----|-----|
| GF-102HA/HBA | 243 | 155 |
| GF-202HA/HBA | 243 | 290 |
| GF-103HA/HBA | 338 | 155 |
| GF-203HA/HBA | 338 | 290 |
| GF-303HA/HBA | 338 | 425 |

|          | H   | W   |
|----------|-----|-----|
| GF-102BA | 229 | 139 |
| GF-202BA | 229 | 274 |
| GF-103BA | 324 | 139 |
| GF-203BA | 324 | 274 |

## Back box

1. Two 2-module back boxes 2. Three 3-module back boxes 3. Back box total width (mm)

(1) Joint pipe(x2) (2) Do not recess back box more than 15mm.

| GF-2B/3B | W    |
|----------|------|
| x 1      | 110  |
| x 2      | 245  |
| x 3      | 380  |
| x 4      | 515  |
| x 5      | 650  |
| x 6      | 785  |
| x 7      | 920  |
| x 8      | 1055 |
| x 9      | 1190 |

## Entrance station components

| AUDIO         |                             | (1) 4. | 8. | 12. | 16. | 20. | 30. | 40. | GF-NS<br>GF-10K |     |     |     |     |     |     |               |               |
|---------------|-----------------------------|--------|----|-----|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|-----|-----|---------------|---------------|
|               |                             |        |    |     |     |     |     |     |                 |     |     |     |     |     |     |               |               |
| AUDIO / VIDEO |                             | (1) 4. | 8. | 12. | 16. | 20. | 30. | 40. | GF-NS<br>GF-10K |     |     |     |     |     |     |               |               |
|               |                             |        |    |     |     |     |     |     |                 |     |     |     |     |     |     |               |               |
| (1)           |                             | 4.     | 4. | 8.  | 8.  | 12. | 12. | 16. | 16.             | 20. | 20. | 30. | 30. | 40. | 40. | GF-NS, GF-10K | GF-NS, GF-10K |
| (2)           | GF-VA                       | —      | 1  | —   | 1   | —   | 1   | —   | 1               | —   | 1   | —   | 1   | —   | 1   | —             | 1             |
|               | GF-VP                       | —      | 1  | —   | 1   | —   | 1   | —   | 1               | —   | 1   | —   | 1   | —   | 1   | —             | 1             |
| (3)           | GF-DA                       | 1      | 1  | 1   | 1   | 1   | 1   | 1   | 1               | 1   | 1   | 1   | 1   | 1   | 1   | 1             | 1             |
|               | GF-DP                       | 1      | 1  | 1   | 1   | 1   | 1   | 1   | 1               | 1   | 1   | 1   | 1   | 1   | 1   | 1             | 1             |
| (4)           | GF-SW                       | 1      | 1  | 2   | 2   | 3   | 3   | 4   | 4               | 5   | 5   | 8   | 8   | 10  | 10  | —             | —             |
|               | GF-4P                       | 1      | 1  | 2   | 2   | 3   | 3   | 4   | 4               | 5   | 5   | 7   | 7   | 10  | 10  | —             | —             |
|               | GF-2P                       | —      | —  | —   | —   | —   | —   | —   | —               | —   | —   | 1   | 1   | —   | —   | —             | —             |
| (5)           | GF-2F                       | 1      | —  | —   | 2   | —   | —   | —   | —               | —   | —   | —   | —   | —   | —   | —             | 2             |
|               | GF-2B                       | 1      | —  | —   | 2   | 2   | —   | —   | —               | —   | —   | —   | —   | —   | —   | —             | 2             |
| (6)           | GF-3F                       | —      | 1  | 1   | —   | —   | 2   | 2   | 2               | 2   | 3   | 3   | 4   | 4   | 4   | 1             | —             |
|               | GF-3B                       | —      | 1  | 1   | —   | —   | 2   | 2   | 2               | 2   | 3   | 3   | 4   | 4   | 4   | 1             | —             |
| (7)           | GF-BP<br>〔 GF-AD<br>GF-AP 〕 | —      | —  | —   | —   | —   | —   | 1   | —               | —   | 1   | —   | 1   | 1   | —   | —             | —             |
| (8)           | GF-NS                       | —      | —  | —   | —   | —   | —   | —   | —               | —   | —   | —   | —   | —   | —   | 1             | 1             |
|               | GF-NSP                      | —      | —  | —   | —   | —   | —   | —   | —               | —   | —   | —   | —   | —   | —   | 1             | 1             |
|               | GF-10K                      | —      | —  | —   | —   | —   | —   | —   | —               | —   | —   | —   | —   | —   | —   | 1             | 1             |
|               | GF-10KP                     | —      | —  | —   | —   | —   | —   | —   | —               | —   | —   | —   | —   | —   | —   | 1             | 1             |

(1) Number of calling button (2) Camera (3) Audio (4) Call switch (5) 2-module Front frame (6) 3-module Front frame (7) Option (8) Digital name scroll



# Two-Wire Bus System

## Residential station

Residential audio station



**GF-1D**  
Apartment station

**GF-1DK**  
Concierge call apartment  
station w/Panic call transfer  
(Photo)

**DOORBELL BUTTON**  
(option)

Residential monitor station



**GF-1MD-SW**  
Apartment station  
w/Service button

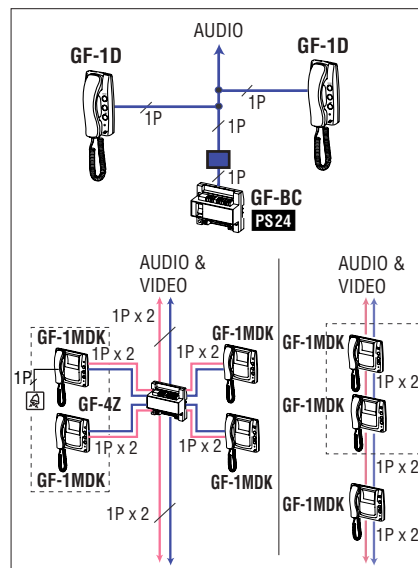
**GF-1MDK**  
Concierge call apartment  
monitor station  
(w/Panic call transfer)  
(Photo)

**DOORBELL BUTTON**  
(option)

### Features

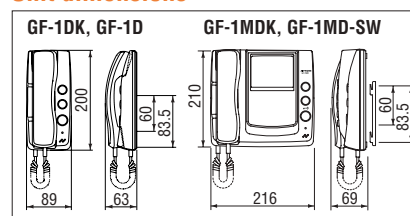
Auto-Entry (Auto door strike)  
Setting required.  
Call tone from Entrance and  
Doorbell are differentiated.

### Trunk line



- BUS line (audio); Max. 50 stations
- Video line; Max.25 Monitors either via max. 6xGF-4Z's or Monitor to Monitor. Do not mix two wiring methods on a same trunk line.

### Unit dimensions



### Specifications (GF-1D, GF-1DK)

|                |   |
|----------------|---|
| Power source   | 24V DC, supplied from 2-wire Bus control unit GF-BC   |
| Consumption    | 16mA  |
| Total station  | 250 residential stations  |
| Wiring         | Single-pair cable common  |
| Type of cable  | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia. |
| Mounting       | Wall-mounting only  |
| Electrical box | 60mm or 83.5mm guided   |
| Housing        | Fire-retardant plastic  |
| Weight         | Approx. 370g  |

### Specifications (GF-1MD-SW, GF-1MDK)

|                       |  |
|-----------------------|--|
| Power source          | 24V DC, supplied from Bus control unit, GF-BC & GF-VBC   |
| Consumption           | 356mA  |
| Total monitor station | 150 GF-1MDK(GF-1MD-SW)'s.<br>250 GF-1MDK(GF-1MD-SW)'s w/GFW-VBC, Expander video control units. |
| Video monitor         | 4 inch direct view flat CRT  |
| Wiring                | Two Single-pair cables common  |
| Type of cable         | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia.  |
| Mounting              | Wall-mounting only   |
| Electrical box        | 60mm or 83.5mm guided  |
| Housing               | Fire-retardant plastic   |
| Weight                | Approx. 1200g  |

## Concierge station

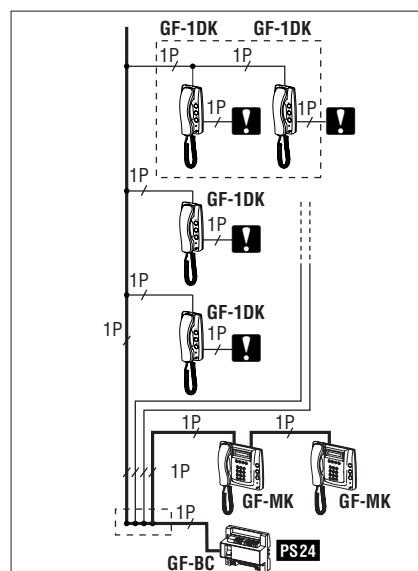
For either audio or audio/video system



**GF-MK**  
Concierge station

**GFW-S**  
Desk-top stand

### Trunk line



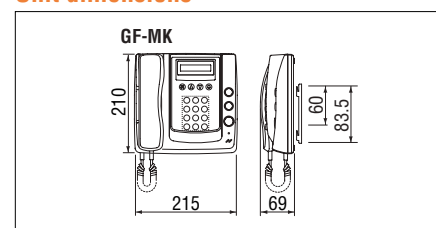
⚠ Panic call switch

- Must be used with GF-1DK or GF-1MDK in Concierge station application.

### Specifications (GF-MK)

|                |   |
|----------------|---|
| Consumption    | 50mA  |
| LCD display    | Max. 16 letters for names   |
| Wiring         | Two Single-pair cables common   |
| Type of cable  | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia.~1.0mm dia. |
| Mounting       | Wall-mounting or Desk-top mounting on GFW-S   |
| Electrical box | 60mm or 83.5mm guided   |
| Housing        | Fire-retardant plastic  |
| Weight         | Approx. 900g  |

### Unit dimensions





## Bus & Video control units



**GF-BC**  
Bus control unit

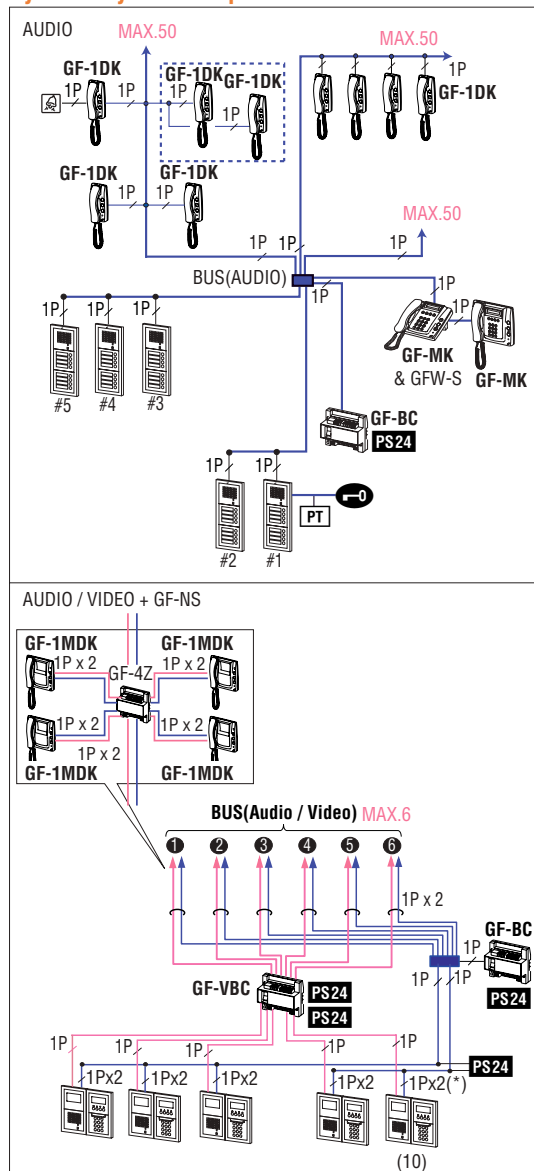


**GF-VBC**  
Video control unit



**GF-4Z**  
4-apt. Bus junction unit

### System layout example



#### AUDIO system

- Max. 250 Apartment stations • Max. 5 Entrance stations
- MAX 100-call panel • Max. 3 Entrance stations per BUS line

#### Audio/video system

- Max. 250 Apartment monitor stations
- Max. 5 Entrance camera stations
- Power supply for five GF-NS's
- 1Px2(\*) : 1P for Audio & 1P for power supply of GF-NS's
- Optional door strike at each entrance

### Specifications (GF-BC)

|               |   |
|---------------|---|
| Power source  | 24V DC, supplied by a power supply PS-2410LD, LC  |
| Consumption   | 900mA.  |
| Wiring        | Single-pair cable common.   |
| Type of cable | 2-conductor cables solid copper & non-braided, polyethylene insulation, 0.65mm ~ 1.0mm dia. |
| Mounting      | DIN rail  |
| Weight        | Approx. 450g  |

### Specifications (GF-VBC)

|              |  |
|--------------|--|
| Power source | 24V DC, supplied by a power supply PS-2410LD, LC |
| Consumption  | 1,100mA.   |
| Wiring       | Single-pair cable common.                        |
| Mounting     | DIN rail   |
| Weight       | Approx. 260g                                     |

### Specifications (GF-4Z)

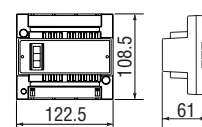
|               |  |
|---------------|--|
| Wiring        | Two single-pair cables common.   |
| Type of cable | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm ~ 1.0mm dia. |
| Weight        | Approx. 450g   |

### Wiring distance

|  | Distance (Diameter of wires)             |
|--|--|
| GF-BC to Distribution point                  | 5m (0.8mm)                               |
| Distrib. point to Entrance station           | 300m (0.8mm)                             |
| Distrib. point to GF-1K(farthest)            | 300m (0.8mm)                             |
| GF-VBC to farthest GF-1MDK 1 per resid. line | 100m (0.8mm), 150m (1.0mm)               |
| GF-VBC to farthest GF-1MDK 2 per resid. line | 50m (0.65mm), 100m (0.8mm), 150m (1.0mm) |
| GF-VBC to Entrance station(GF-VA, Video)     | 100m (0.8mm), 150m (1.0mm)               |
| GF-BC, VBC/A to ea. Power supply             | 5m (0.8mm)                               |
| GF-NS/A to Power supply                      | 300m (0.8mm), 300m (1.0mm)               |
| MAW-B to Entrance station                    | 300m (0.8mm)                             |
| Total wiring distance(R1, R2)                | 2.5km (0.8mm)                            |

### Unit dimensions

#### GF-BC, GF-VBC, GF-4Z



## Power supply

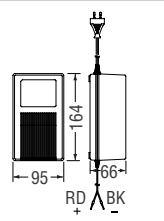


**PS-2410LD**

**PS-2410LC**

### Unit dimensions

#### PS-2410LD PS-2410LC



RD: Red, BK: Black

### Specifications

|                                    |             |            |
|------------------------------------|-------------|------------|
| Power supply                       | PS-2410LD   | PS-2410LC  |
| Power source                       | 220-240V AC | 120V AC    |
| Secondary output voltage & current | 24V DC, 1A  | 24V DC, 1A |



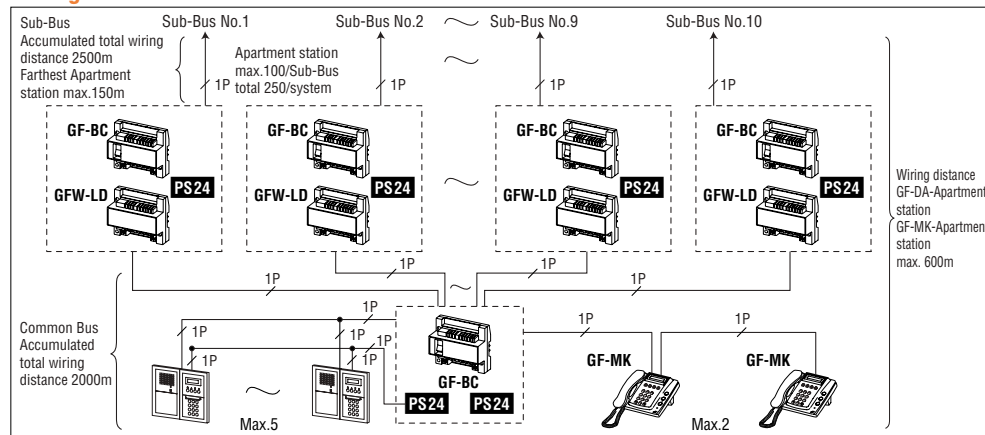
# Two-Wire Bus System

## Long distance adaptor(Audio)



**GFW-LD**  
Long distance adaptor  
for audio

### Wiring



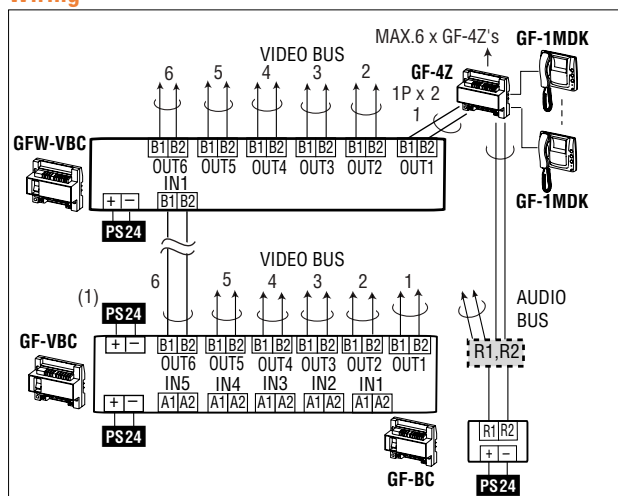
\*Communication method : Auto-voice actuation

## Expanded video control unit



**GFW-VBC**  
Expander video control  
unit

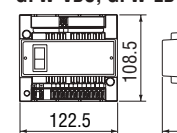
### Wiring



Standard & Expanded video wiring (w/GFW-VBC) (1) Required when a second GF-1MDK is installed in an apartment(s).

### Unit dimensions

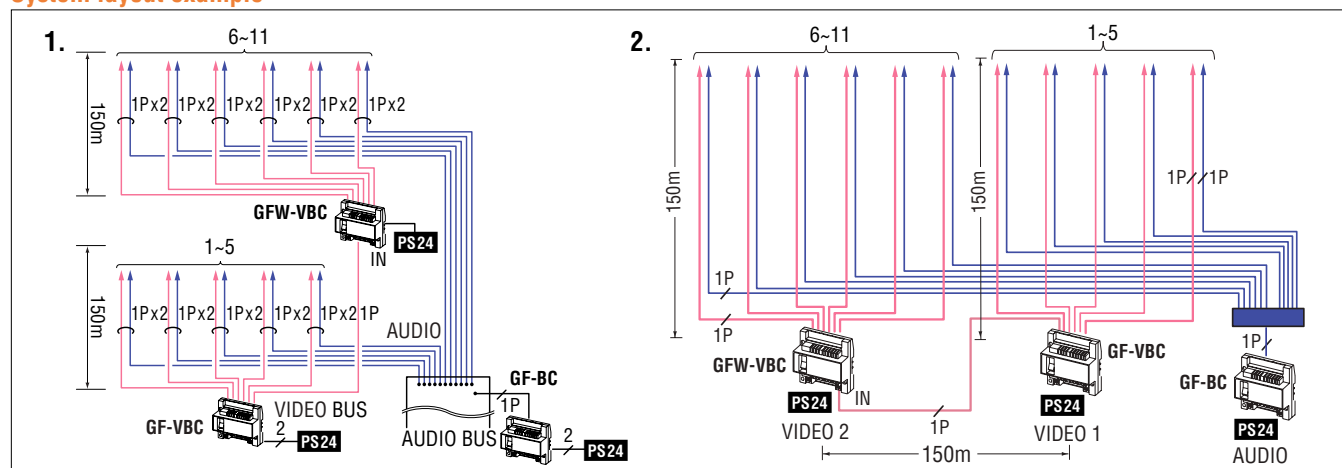
**GFW-VBC, GFW-LD**



### Specifications

|               |  |
|---------------|--|
| Power source  | 24V DC, supplied by a power supply PS-2410LD, LC   |
| Consumption   | 0.9A   |
| Wiring        | Two single-pair cables common  |
| Type of cable | 2-conductor cable solid copper & non-braided, polyethylene insulation, 0.65mm dia~1.0mm dia. |

### System layout example



1. Increase wiring distance to the farthest monitor stations  
1~5 Standard Bus lines 6~11 Expanded Bus lines

2. Increase Video trunk lines

### Option



**MAW-B**  
Auxiliary light control relay  
for entrance light



**W-DIN11**  
DIN mounting rail  
for GF-BC, GF-VBC,  
GF-4Z, GFW-VBC  
GFW-LD



**AC-10S**  
Access control keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control keypad,  
flush mount  
→ P.99



# Two-Wire Electric Lock Door Phone

ENTRANCE

RESIDENCE

1



4

## DA-4DS

### Entrance station



**DA-2DS**  
2-call door station



**DA-4DS**  
4-call door station



**DA-4DG**  
4-call door station

### Residential station



**DA-1MD**  
Master station

**AC transformer**  
**PT-1211D PT-1211C**  
→ P.103

### Lineup



**EL-12S**  
Electric door strike  
→ P.101



**AC-10S**  
Access control keypad, surface mount  
→ P.99



**DAR-1**  
Call extension



**AC-10F**  
Access control keypad, flush mount  
→ P.99

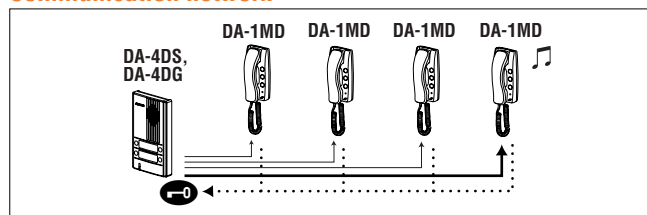


**DAW-P**  
Door station mounting plate (83.5mm)

### Features

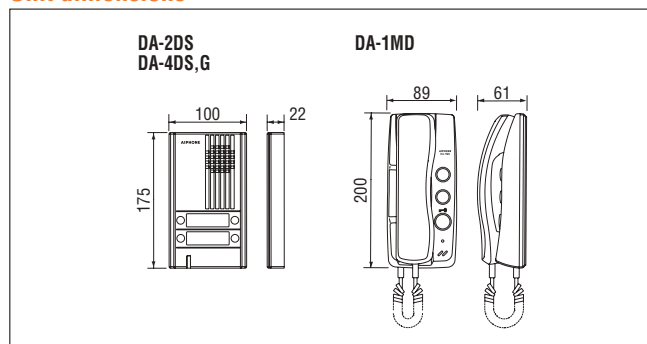
- Two-wire system
- Door release wired to door station, requiring no power transformer
- User-optional function button
- Call tone MUTE with indicator
- Call extension sounder

### Communication network



Electronic tone. Direct select ring.

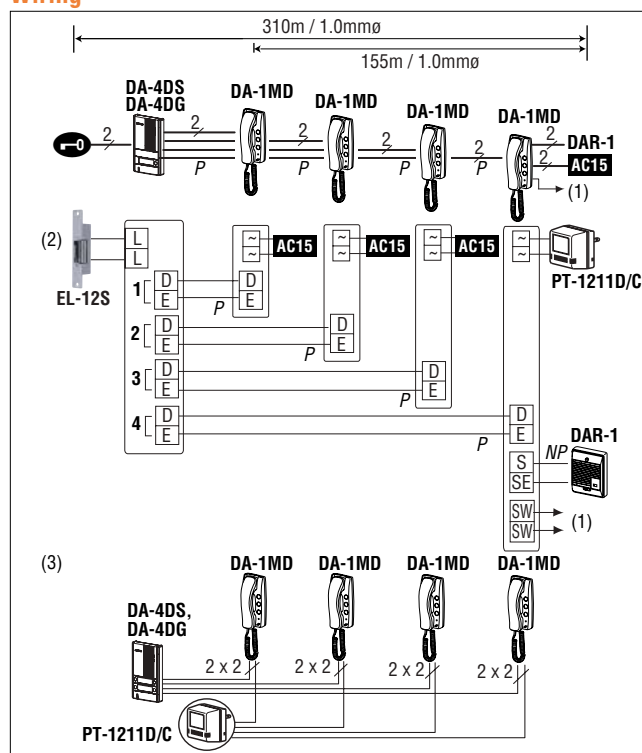
### Unit dimensions



### Specifications (DA-4DS, G)

|               |   |
|---------------|---|
| Power source  | 15V AC  |
| Power supply  | PT-1211D, PT-1211C  |
| Communication | Press and hold down Button to call.   |
| Wiring        | 2 wires, throughout system: AC trans - Master - Door - Door rlse.   |
| Distance      | PT-1211D/C ~ Door rlse. 110m(0.65mmø) 200m(0.8mmø) 310m(1.0mmø)<br>PT-1211D/C ~ DA-1MD 55m(0.65mmø) 100m(0.8mmø) 155m(1.0mmø) |

### Wiring



(1) Ext. device Relay/Controller : User-optional function(AC18V, 40mA) (2) Door release : EL-12S or 16V AC, 20 Ω or more (3) When a single common power supply is used



# Hands-free Two-Wire Electric Lock Door Phone

ENTRANCE

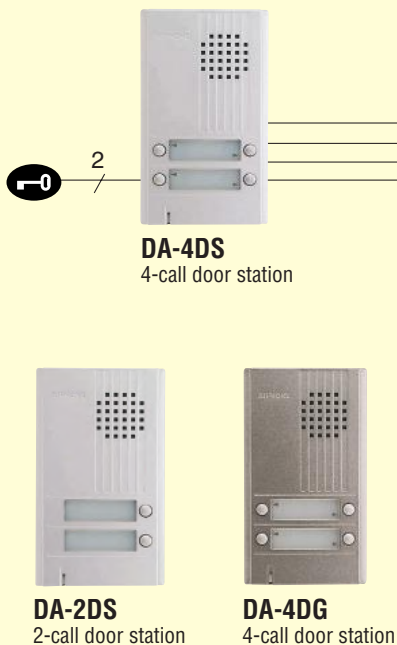
RESIDENCE

1

4

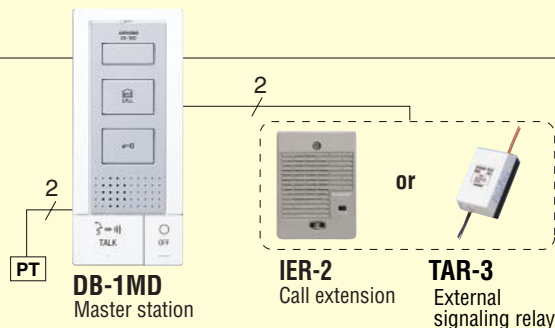
## DA-4DS

### Entrance station



### Residential station

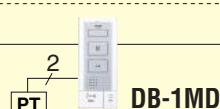
#### Residence 1



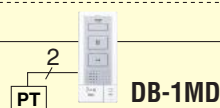
#### Residence 2



#### Residence 3

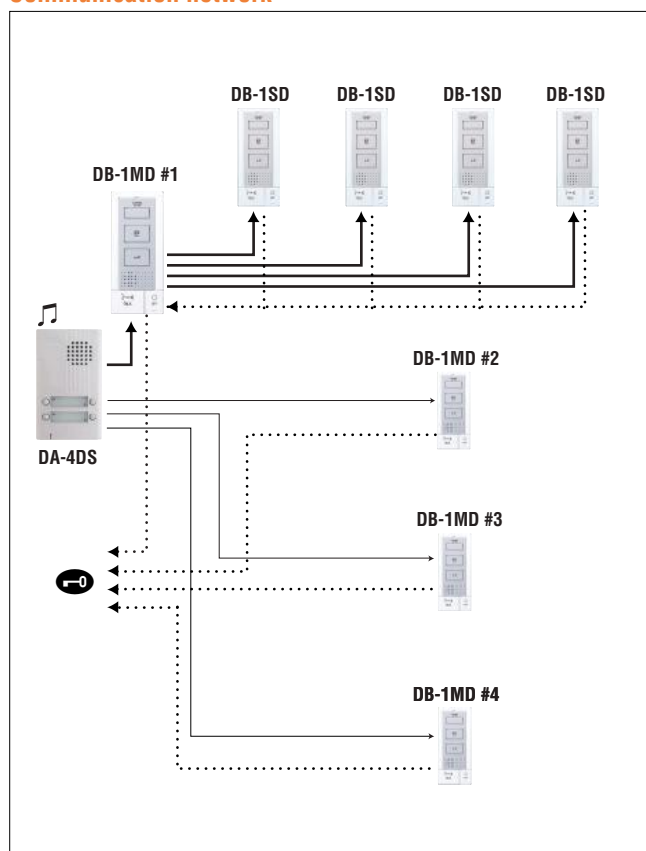


#### Residence 4

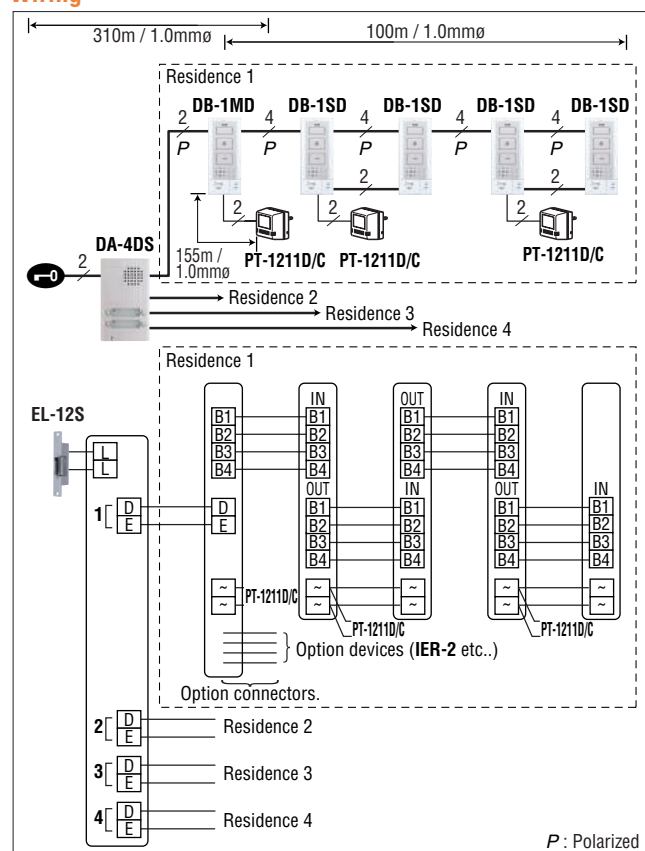


PT: AC transformer  
PT-1211D PT-1211C → P.103

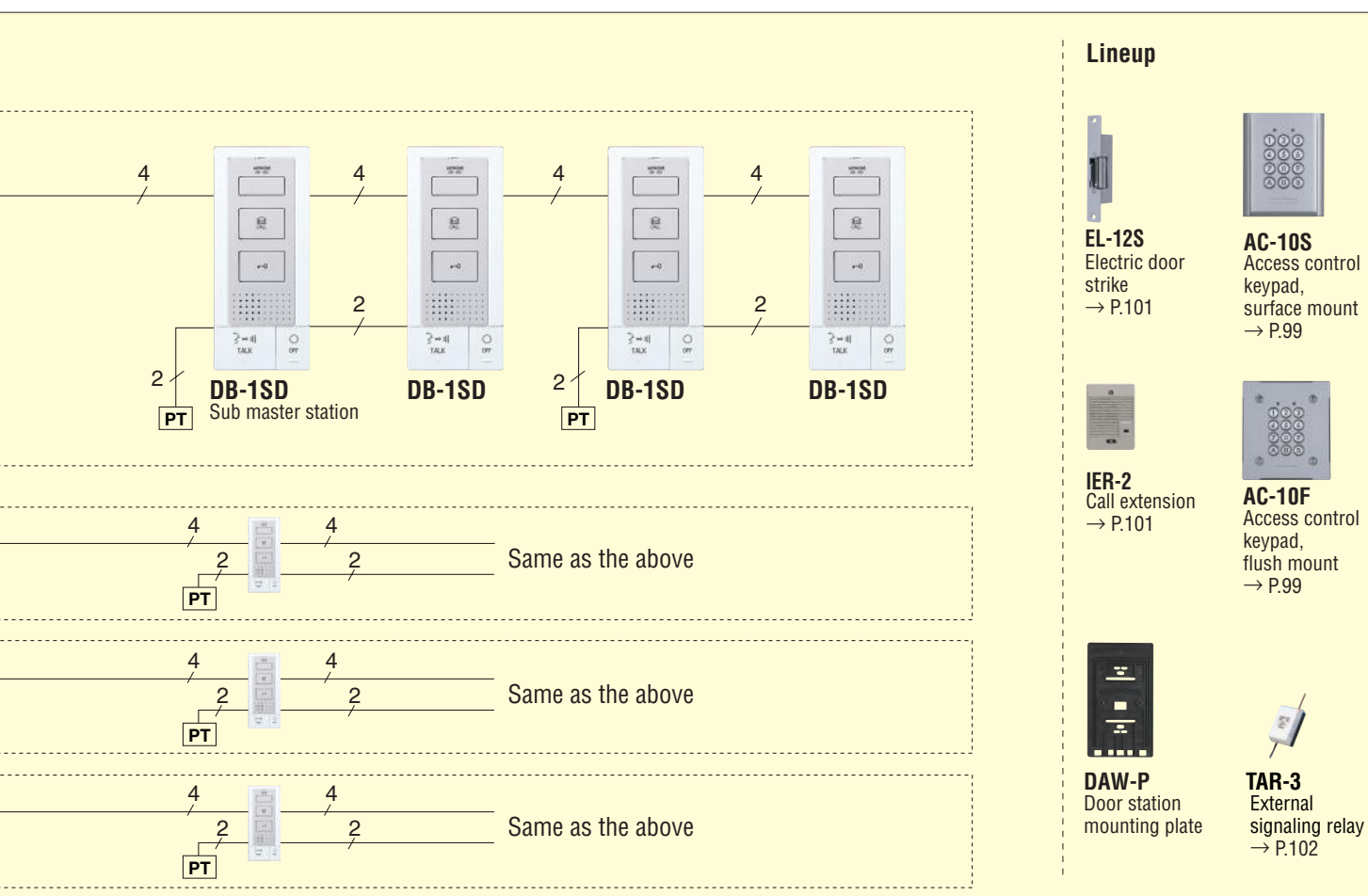
### Communication network



### Wiring









# Audio Entry Security

ENTRANCE

1

RESIDENCE

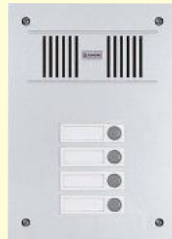
58

VC-M

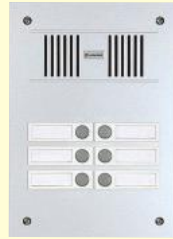
## Entrance station



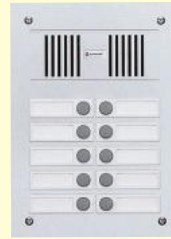
**VC-0M**  
Blank entrance station



**VC-4M**  
4-call entrance station



**VC-6M**  
6-call entrance station



**VC-10M**  
10-call entrance station

**Power supply**  
**PS-1225S**  
**PS-1225UL**  
**PS-1225**  
→ P.103



**VCH-8**  
8-call add-on panel



**VCH-16**  
16-call add-on panel



**EL-12S**  
Electric door strike  
→ P.101



**RY-PA**  
Door release relay  
→ P.101

## Residential station



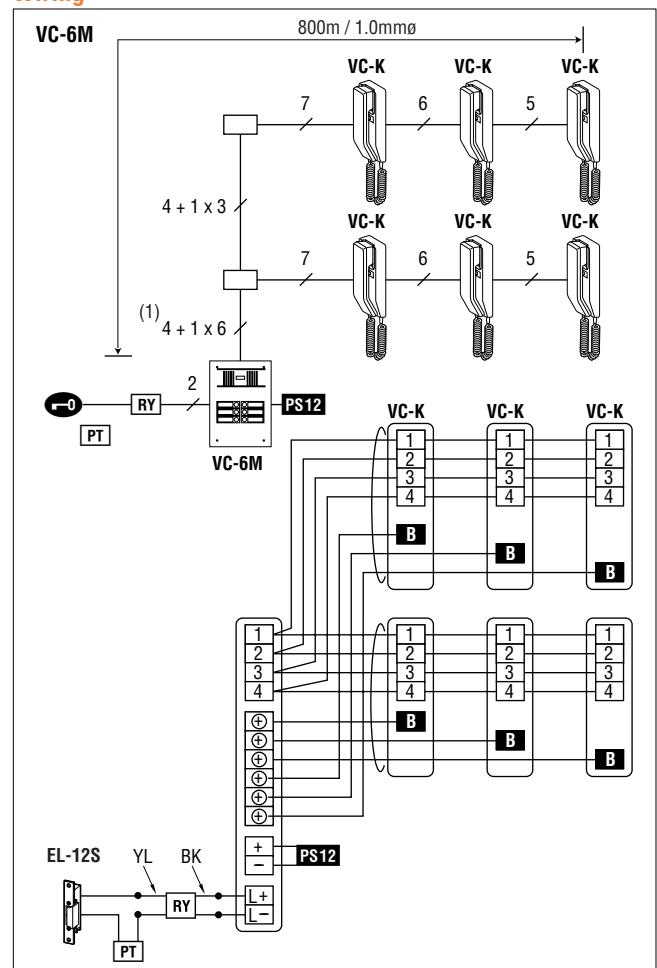
**VC-K**  
Apartment station

**Other Panels**  
**VC-1M, VC-2M & VC-8M**

## Features

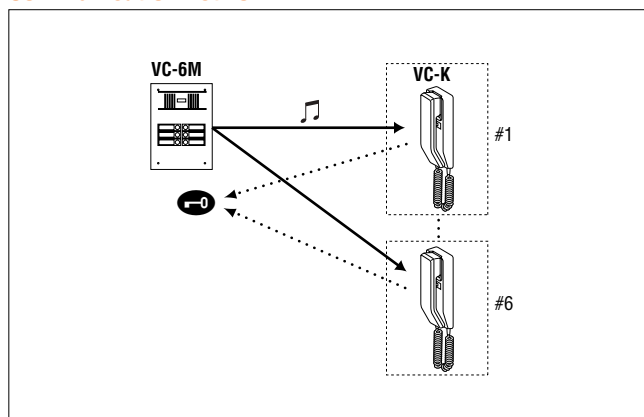
- Single entry 0 to 10-call panel
- Add-on 8 or 16 call panel(s)
- VC-K handset, one or two per residence
- Directory back illumination
- Single or larger panels up to 58 buttons

## Wiring



(1) 4 common + 6 (no. of apartments) \* Terminal 4 for door release  
**PS12** : PS-1225S/UL **PT** : AC transformer **RY** : RY-PA relay  
 BK: Black(2) YL: Yellow(2)

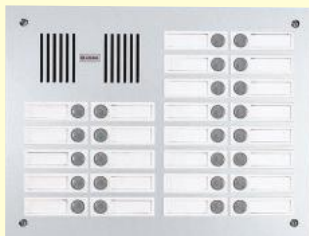
## Communication network



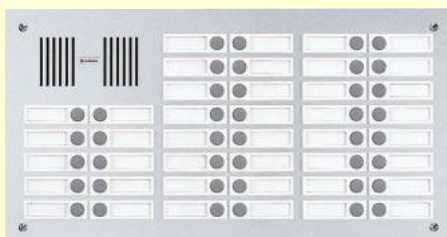
Direct select ring



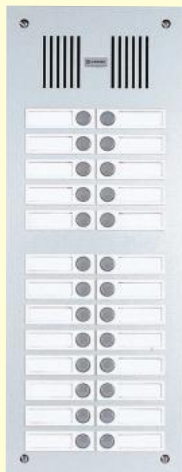
## Entrance call panel



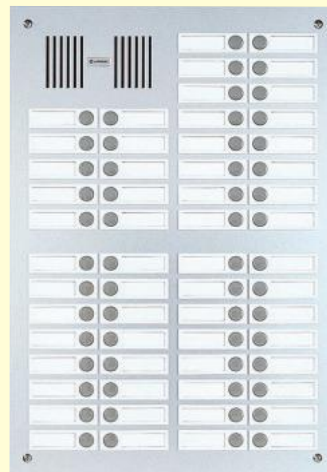
**VC-26MY**  
26-call entrance station



**VC-42MY**  
42-call entrance station



**VC-26MT**  
26-call entrance station



**VC-58MT**  
58-call entrance station

## Lineup

**VC-BBX**  
Surface  
mount box

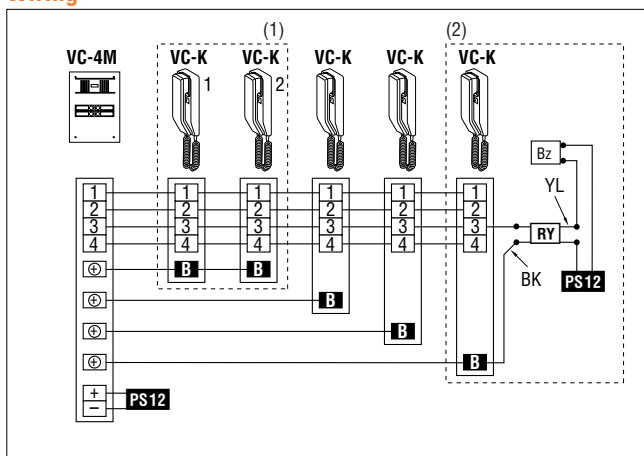


**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99

## Wiring



### Added variations

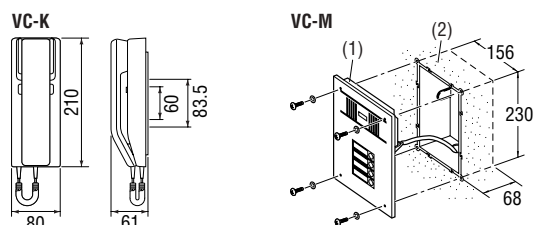
(1) Two VC-K stations per apartment. Calling is not available between room stations 1 & 2.

(2) Use a local buzzer or bell rated less than 24V DC, 2.5A.

**PS12** : PS-1225/S/UL **RY** : RY-PA relay

YL : Yellow(2) BK : Black(2)

## Unit dimensions



|           | (1) |     |   | (2) |     |    |
|-----------|-----|-----|---|-----|-----|----|
|           | H   | W   | D | H   | W   | D  |
| VC-M, VCH | 260 | 186 | 2 | 230 | 156 | 68 |
| VC-26MY   | 260 | 339 | 2 | 230 | 309 | 68 |
| VC-42MY   | 260 | 492 | 2 | 230 | 462 | 68 |
| VC-26MT   | 487 | 186 | 2 | 457 | 309 | 68 |
| VC-58MT   | 487 | 339 | 2 | 457 | 309 | 68 |
| VC-BBX    | —   | —   | — | 264 | 190 | 52 |

**Multiple box mounting;** Keep a distance of 186mm between two box centers.

(1) Front panel (2) Back box

## Specifications (VC-M)

|               |   |
|---------------|---|
| Power source  | 12V DC, 80mA (intercom).<br>100mA (lamp)  |
| Power supply  | PS-1225S, PS-1225UL, PS-1225  |
| Communication | Electronic buzzer rings VC-K station(s). (Freq.: 600Hz. approx.) Take (either) handset to reply. Single open channel. |
| Wiring        | 4 common + no.(residences), in loop.<br>VC-M ~ VC-K: 35Ω looped.<br>VC-M ~ power supply: 4Ω looped.                   |
| Distance      | VC-M to VC-K 330m(0.65mmø) 800m(1.0mmø)<br>VC-M to PS-1225/S/UL 40m(0.65mmø) 90m(1.0mmø)                              |



# Open Voice Intercom

## DOOR 1 ROOM 1 LEM-1DL

### Door station



**LE-D**  
Sub station  
→ P.66



**EL-12S**  
Electric door  
strike  
→ P.101



**LE-DA**  
Sub station  
→ P.66



**LE-DL**  
Sub station  
→ P.66

### Master station



**LEM-1DL**  
Master station

### Lineup



**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control  
keypad,  
flash mount  
→ P.99

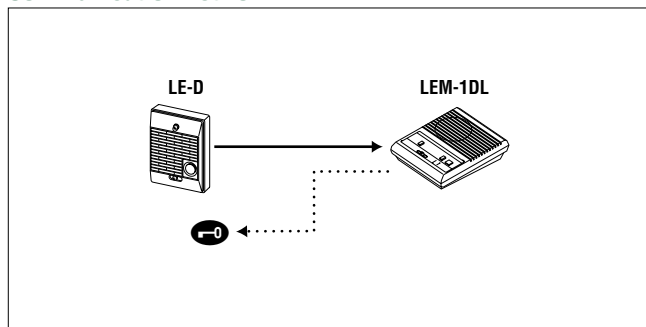
### Power supply

**PS-1225S PS-1225UL**  
**PS-1225** → P.103

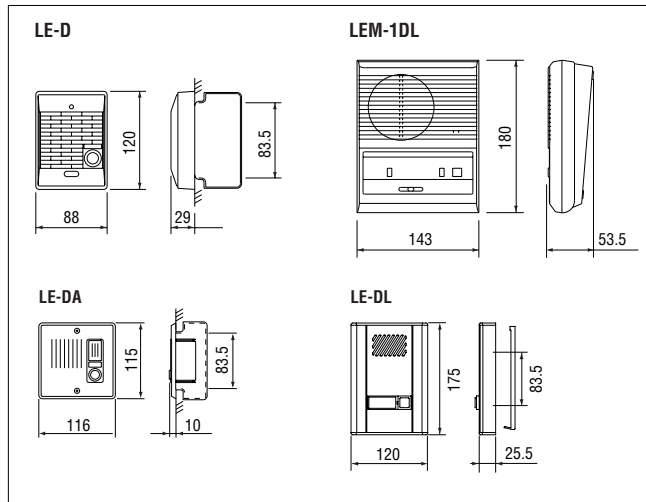
### Features

- Single door open voice access control system
- Adjustable transmit (front) and tone volumes
- AC/DC power supply

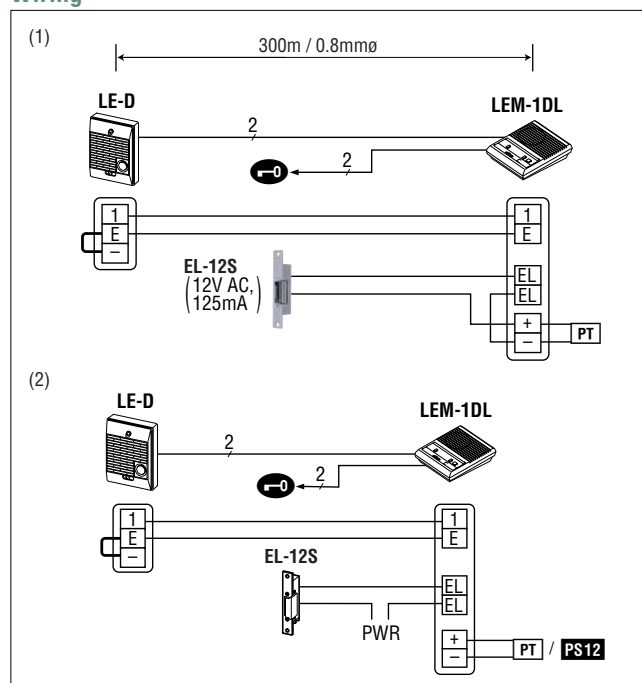
### Communication network



### Unit dimensions



### Wiring



(1) Using EL-12S door release

(2) Using door release of other manufacture rated : 30V AC/DC, 1A max.

Do not remove shorting link on LE-D. PWR : Power source

### Specifications (LEM-1DL)

|               |   |
|---------------|---|
| Power source  | 12~16V AC, 4VA<br>12~24V DC, 200mA (24V)  |
| Power supply  | AC transformer, PS-1225S, PS-1225UL, PS-1225  |
| Communication | When called by tone, press TALK to reply. Press door release button to release door, and press OFF for standby. |
| Wiring        | 2 wires, non-polarized (+2 for EL-12S)  |
| Distance      | LEM-1DL to door 200m(0.65mmø) 300m(0.8mmø)  |



# Open Voice Intercom

## MASTER 1 SUB 3 LEM

### Master station



**LEM-1**  
1-call master



**LEM-3**  
3-call master

### Power supply

**PS-0602D PS-0602C** → P.103

### Door station



**LE-D**  
Sub station  
→ P.66



**LE-DA**  
Sub station  
→ P.66

### Room sub station



**LE-A**  
Sub station  
→ P.66



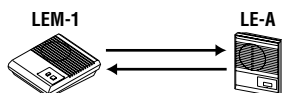
**LE-AN**  
Privacy sub  
→ P.66

## Features

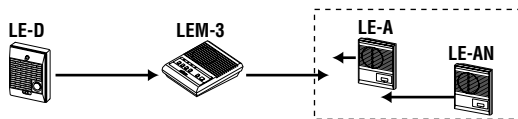
- Open voice communication
- Push-to-talk at master, hands free at remote
- LE sub stations: either door station or room sub station
- Voice volume control

## Communication network

### LEM-1



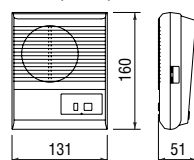
### LEM-3



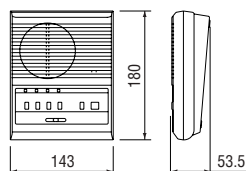
LEM-1; Tone or voice. LEM-3; Selective call w/tone or voice. Tone and LED from sub

## Unit dimensions

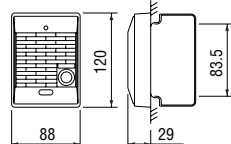
### LEM-1, LE-A, LE-AN



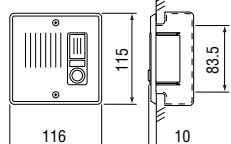
### LEM-3



### LE-D

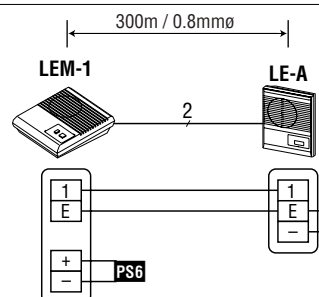


### LE-DA

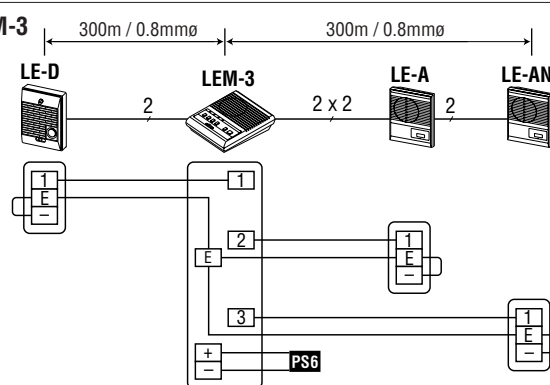


## Wiring

### LEM-1



### LEM-3



★ Do not remove shorting link on subs. **PS6** : PS-0602D, PS-0602C

## Specifications (LEM)

|               |   |
|---------------|---|
| Power source  | 6V DC, 200mA  |
| Power supply  | PS-0602D, PS-0602C  |
| Communication | Sub calls in w/tone and LED, 20 sec.<br>Depress selector button and press or release TALK button. Sub called by tone or voice.<br>Reply hands-free. |
| Output        | 350mW output, adjustable  |
| Wiring        | 2 parallel wires per sub, non-polarized   |
| Distance      | LEM to sub 200m(0.65mmø) 300m(0.8mmø)   |



## Master station



**LEF-3**  
3-call master

**LEF-3L**  
3-call master w/  
door release button

## Master station



**LEF-5**  
5-call master

**LEF-5W**  
5-call master  
w/terminal box



**LEF-10**  
10-call master

**LEF-10W**  
10-call master  
w/terminal box



**LEF-10S**  
10-call master (all call)

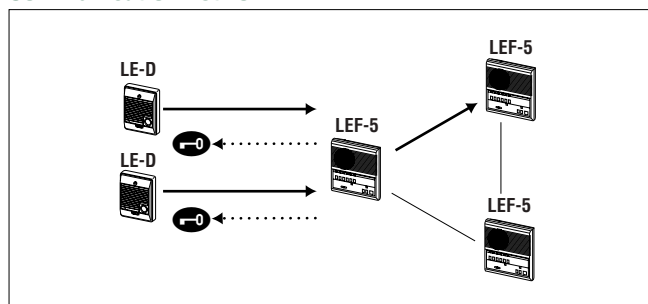
## Power supply

**PS-1225S PS-1225UL PS-1225** → P.103

## Features

- Intermixable system with any number of masters and subs to max. capacity
- Selective calling from any master with hands-free reply
- LEF surface and LEF-C semi-flush units can be intermixed
- Variety of sub stations are available
- Weather-resistant door stations (any number) with selective door release
- System options: PanTilt door/monitor(s), All Call/Music/Chime
- Selective door release with LEF-5/10/10S (w/RYP-A)

## Communication network



Selective call between inside stations. Answering & releasing door from any inside station

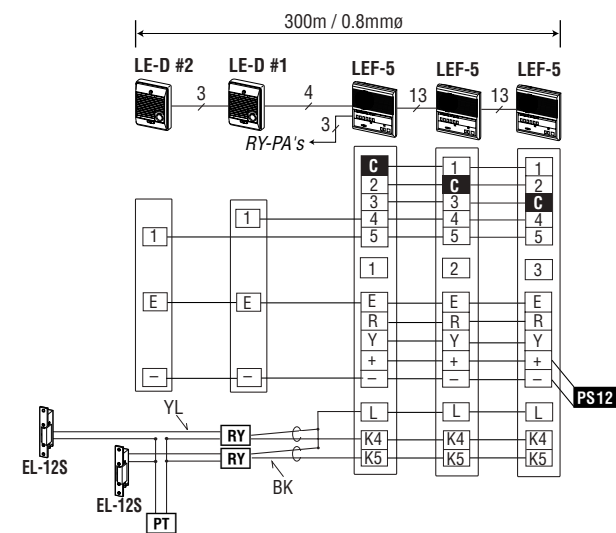
## Cabling

| Models  | Capacity    | Cable                   |
|---------|-------------|-------------------------|
| LEF-3   | 4 stations  | 9 wires                 |
| LEF-5   | 6 stations  | 11 wires (+5: K1~K5*)   |
| LEF-10  | 11 stations | 17 wires (+10: K1~K10*) |
| LEF-10S | 11 stations | 20 wires (+10: K1~K10*) |

- K1 ~K10: Control terminals for video, door release.
- LEF-3 does not have L terminal.
- Door & inside sub stations can ring 2 or 3 LEF masters.
- LEF All-master trunk cable=5 (or 6) common + no. of LEF (& subs)

## Wiring

### Door answering w/selective door release



**PS** : PS-1225S, PS-1225UL, PS-1225 **PT** : AC transformer

Terminal 4 : for LE-D #1, Terminal 5 for LE-D #2.

YL : Yellow(2) BK : Black(2).



## Door station



**LE-D**  
Sub station  
→ P.66



**LE-DA**  
Sub station  
→ P.66

## Room sub station



**LE-A**  
Sub station  
→ P.66



**LE-AN**  
Privacy sub  
→ P.66



**LE-A3**  
3-call sub  
→ P.66



**LE-AN3**  
3-call privacy sub  
→ P.66



**LEF-20(S)\***, 20-call master (photo)

**LEF-30(S)\***, 30-call master

**LEF-40(S)\***, 40-call master

\*Not available in Europe, Australia, nor New Zealand

## All call, music & chime



**BG-10C**  
All call, chime & music  
adaptor  
→ P.66

## Lineup



**EL-12S**  
Electric door  
strike  
→ P.101



**RY-PA**  
Door release relay  
→ P.101

**LEW-5**  
LEF-5 terminal  
box

**LEW-10**  
LEF-10 terminal  
box

**LEW-10S**  
LEF-10S terminal  
box



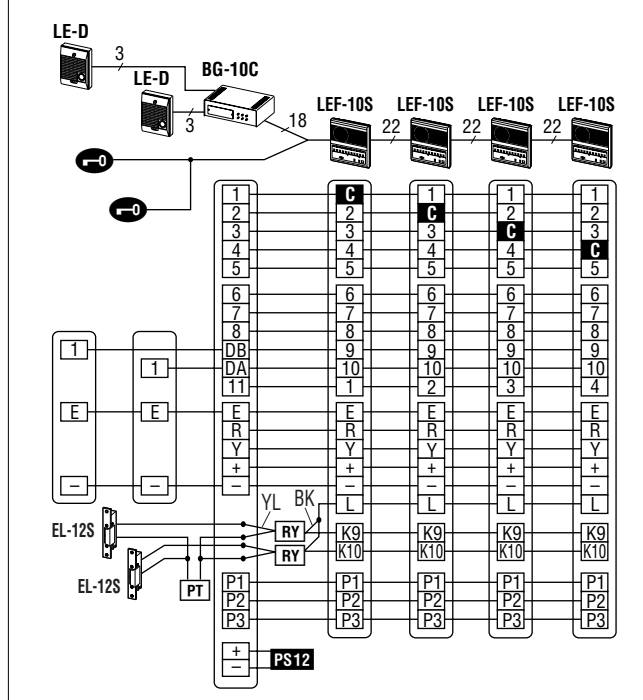
**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99



**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99

## Wiring

### Intermixed configuration



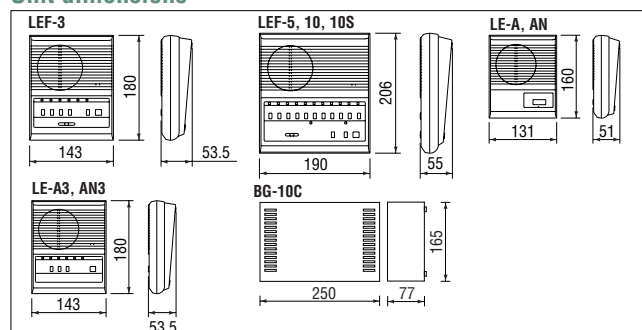
3 wires per sub. Run 3 wires to subs individually, or use multi-conductor cable to wire multiple subs (2 common + 1 per sub).

- LE-D call-in chimes on LEF stations.
- Only LEF-10S station can transmit all call.
- Match door release control terminals (Kn) with door selector #10 with K10, #9 with K9.

★ Remove a shorting link on LE subs.

**PS12** : PS-1225S, PS-1225UL, PS-1225 **PT** : AC transformer **RY** : RY-PA

## Unit dimensions



## Specifications (LEF)

|                 |   |
|-----------------|---|
| Power source    | 12V DC, 300mA per LEF station.  |
| Power supply    | PS-1225S, PS-1225UL, PS-1225  |
| Communication   | Sub calls in w/(chime) tone & LED, 20 sec. Depress the LED lit selector button. Use TALK/LISTEN switch. Master calls in w/tone or voice (no LED lit). Reply hands-free. To call, depress a selector, and call by voice or tone. |
| Door release    | Contact: 30V DC, 0.1A (resistance load).  |
| Selector switch | Contact: 12V DC, 30mA.  |
| Wiring          | 5 wires common + no. LEF (& subs) (all-master system)<br>2 wires per sub (single-master system).<br>* E to - link remains attached.<br>LE subs: 3 wires with the link removed (when intermixed)                                 |
| Distance        | Farthest LEF's 200m(0.65mmø)<br>300m(0.8mmø)  |

## Specifications (BG-10C)

|                     |   |
|---------------------|---|
| Power source        | 12V DC, 2.5A (music max. output).<br>1.5A(music, chime & all call). 0.1A standby                    |
| All call transmit   | From LEF-3C, 5C, 10C & LEF-1C and LEF-10S   |
| All call receive    | All LEF master station, and LE-C, CN  |
| Chime tone transmit | AUX R, E and AUX L, E   |
| Controls            | Music on/off. 11 selector switches of music & chime, chime only or off.                             |
| Wiring              | 19 wires max. BG-10C to LEF-10C.<br>3 wires to each LE-D, DA.                                       |
| Distance            | BG-10C to LEF-C 150m(0.65mmø).<br>230m(0.8mmø)<br>LE-D/DA to BG-10C 200m(0.65mmø).<br>300m(0.8mmø). |



## Open Voice Intercom

DOOR  
**3**

▶

ROOM  
**8**

**LEF-C**

## Door station

## Master station

## Sub station



**LE-D**  
Sub station  
→ P.66



**LEF-3C**  
3-call master



**LEF-5C**  
5-call master



**LEF-10C**  
10-call master



**LE-B\***  
Sub station  
\*Not available in Europe



**LEF-1C**  
All call sub master

**LE-BN\***  
Privacy sub  
\*Not available in Europe

**LE-C\***  
Sub station  
w/MUSIC receive  
volume control  
\*Not available in Europe

**LE-CN\***  
Privacy sub  
w/MUSIC receive  
volume control  
\*Not available in Europe

## Power supply

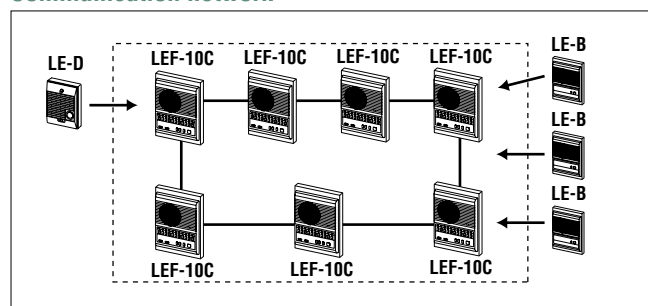
**PS-1225S PS-1225UL PS-1225**

→ P.103

## Features

- Intermixable system with any number of masters and subs to max. capacity
- Selective calling from any master with hands-free reply
- LEF surface and LEF-C semi-flush units can be intermixed
- Variety of sub stations are available
- Weather-resistant door stations (any number) with selective door release
- System options: PanTilt door/monitor(s), All Call/Music/Chime
- Selective door release with LEF-5/10/10S (w/RP-PA)

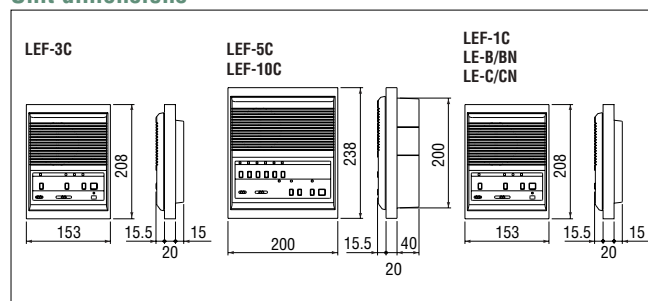
## Communication network



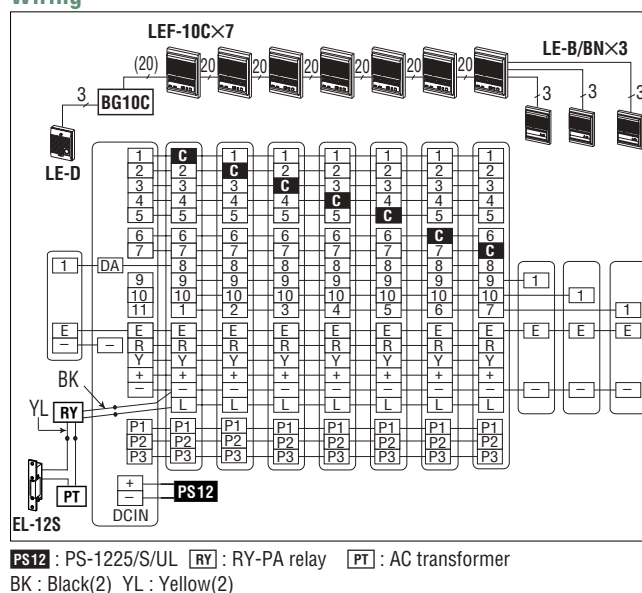
## Intermixed configuration

Internal communication by Selective call. Sub calls in with tone & LED 20 sec.

## Unit dimensions



## Wiring



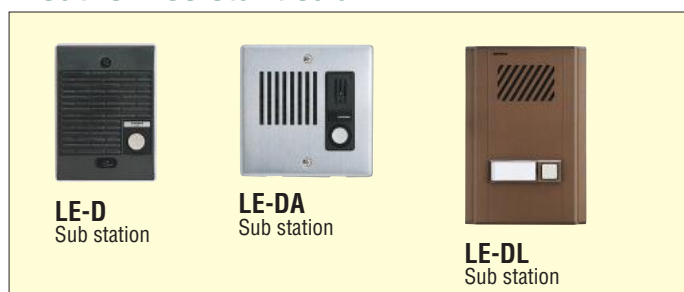
## Specifications (LEF-C)

|                 |   |
|-----------------|---|
| Power source    | 12V DC, 300mA per station.  |
| Power supply    | PS-1225S, PS-1225UL, PS-1225  |
| Communication   | Sub/door calls in w/tone & LED, 20 sec.<br>Depress the LED lit selector button. Depress TALK/LISTEN switch. The LED stays lit while in use. Single talk channel w/OCCUPIED lit. |
| Output          | 800mW at 20Ω (receive).<br>500mW at 20Ω (transmit).   |
| Door release    | Contact: 110V AC, 1A.<br>24V DC, 1A. (on RY-PA output).   |
| Selector switch | Contact: 12V DC, 1A. (K terminals)  |
| Wiring          | 5 or 6 common + no. all stations  |
| Distance        | Farthest LEF-C's 200m(0.65mmø)<br>300m(0.8mmø)  |

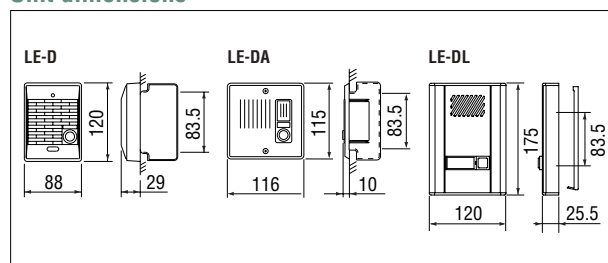


# LE Sub stations & Accessories

## Weather-resistant sub

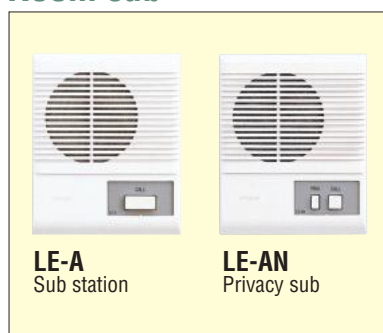


### Unit dimensions

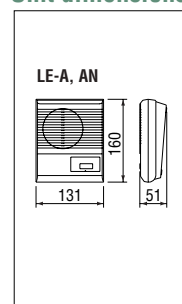


LE-DA: 2-gang mounting

## Room sub

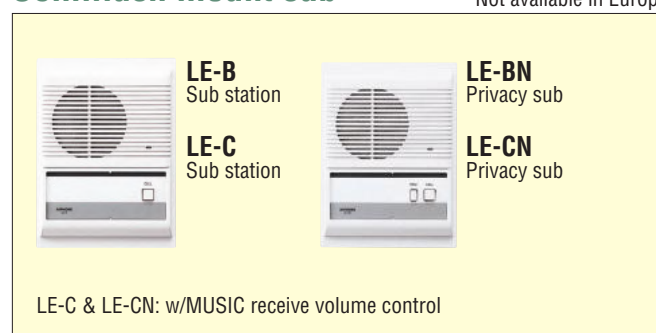


### Unit dimensions



## Semiflush mount sub

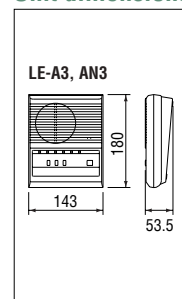
\*Not available in Europe



## 3-call sub



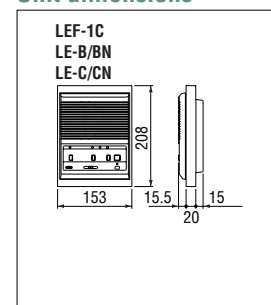
### Unit dimensions



## All call sub master



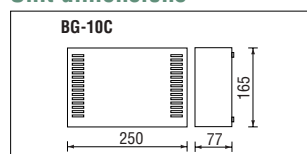
### Unit dimensions



## All call/music/chime adaptor



### Unit dimensions



### Specifications (BG-10C)

|                     |   |
|---------------------|---|
| Power source        | 12V DC, 2.5A (music max. output). 1.5A(music, chime & all call). 0.1A standby               |
| All call transmit   | From LEF-3C, 5C, 10C & LEF-1C and LEF-10S   |
| All call receive    | All LEF master station, and LE-C, CN  |
| Chime tone transmit | AUX R, E and AUX L, E   |
| Controls            | Music on/off. 11 selector switches of music & chime, chime only or off.                     |
| Wiring              | 19 wires max. BG-10C to LEF-10C. 3 wires to each LE-D, DA.                                  |
| Distance            | BG-10C to LEF-C 150m(0.65mmø). 230m(0.8mmø). LE-D/DA to BG-10C 200m(0.65mmø). 300m(0.8mmø). |



# Handset Intercom

MASTER


1


SUB

3


AT-406

**Master station**  
  
Master station

**Sub station**  
  
**AT-306**  
Sub station

**Boxed set**  
  
**AT-406**  
Boxed set (white color)  
**AT-406P**  
Display pack  
**Power supply**  
**PS-0602D PS-0602C** or Batteries  
→ P.103

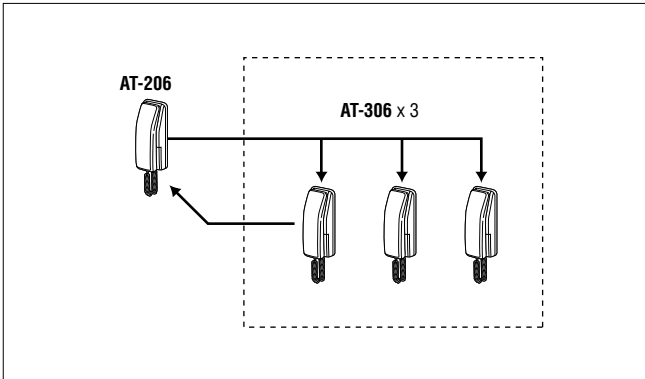
  
**AT-406B/A**  
Boxed set (charcoal gray)

**Lineup**  
  
**TAR-3**  
External signaling relay  
→ P.102

## Features

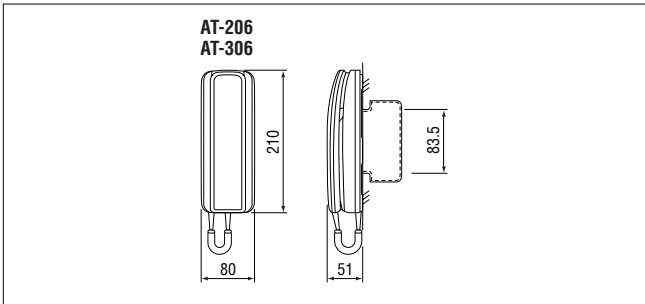
- Handset master-sub intercom w/2 additional subs (optional)
- Battery status LED
- Batteries or DC power supply
- Buzzer or bell activation (optional)

## Communication network

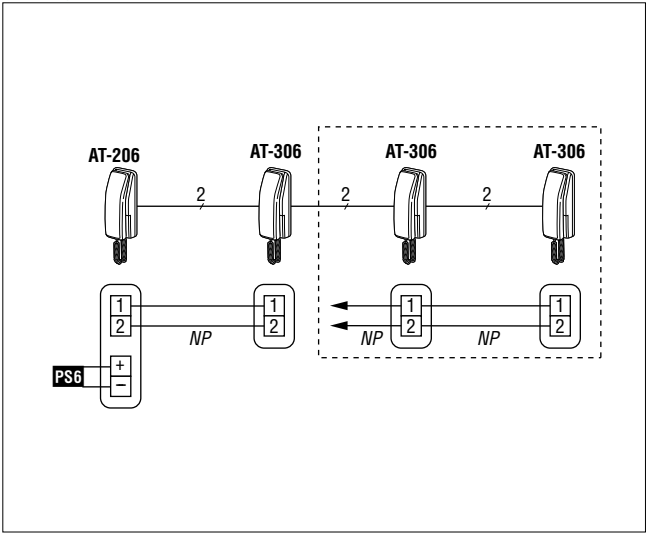


Master calls all the subs simultaneously, while the sub rings the master only.

## Unit dimensions



## Wiring



PS6 : PS-0602D, PS-0602C

## Specifications (AT-406)

|               |  |
|---------------|--|
| Power source  | 6V DC, 150mA   |
| Power supply  | PS-0602D, PS-0602C or Batteries "AA" (SUM-3) x 4 pcs   |
| Communication | Press CALL button to ring all subs. Pick up any phone. Sub rings master only. Common talk.       |
| Wiring        | 2 parallel wires. non-polarized  |
| Distance      | 2-station set 700m(0.65mmø)<br>1000m(0.8mmø)<br>AT-206 to subs 1~3 400m(0.65mmø)<br>600m(0.8mmø) |



## Phone extension



**Power supply**  
PS-2420S PS-2420UL  
→ P.104

**YAZ-90-3W**  
Phone master station

## Lineup

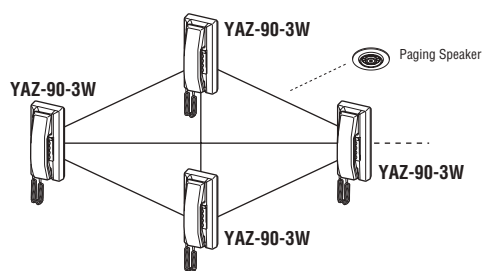


**YAW-RB**  
1-zone paging  
adaptor  
for YAZ-90-3W

## Features

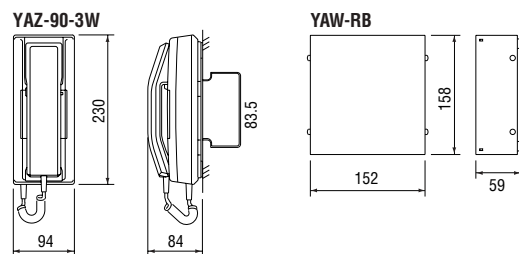
- Microprocessor built-in intercom expandable to max. 90 stations on 4-pair cable
- Up to 2.9km wiring distance
- Zone paging
- Communication functions: Camp-on busy, secretary transfer, call transfer
- Line-off trouble on one channel does not affect the other channels

## Communication network

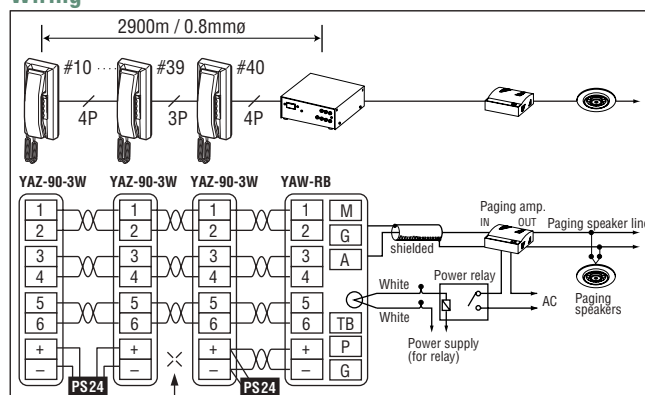


Station to station communication in any pair

## Unit dimensions



## Wiring



- Remove +, - wires between YAZ stations of different blocks. Within a block locate a power supply in the center of cable run, and make groups of max. 10 YAZ stations. As shown, connect +, - wires from the power supply to each group's initial YAZ station.

**PS24** : PS-2420S, PS-2420UL, PS-2420

## Specifications (YAZ-90-3W)

|                       |  |
|-----------------------|--|
| Power source          | 24V DC, 150mA max. 20mA standby.   |
| Power supply          | PS-2420S, PS-2420UL, PS-2420 per 30-station block.   |
| Communication         | Dial 2-digit station # to ring other station with tone or voice pressing PAGE. Privacy communication on each channel (max. 3). |
| Line loop resistance  | Must not exceed 200Ω for farthest stations. 20Ω for power line.  |
| Wiring                | 4-twisted pairs (shielded) in loop.  |
| Total wiring distance | Farthest YAZ's 1900m(0.65mmø), 2900m(0.8mmø)   |

## Specifications (YAW-RB)

|                          |   |
|--------------------------|---|
| Power source             | YAW-RB: 24V DC, 150mA (paging). 40mA (standby).                 |
| Consumption              | YAW-RB = 5 YAZ's, powered by YAZ network.                       |
| Paging impedance/level   | Input: 600Ω/78mV(RMS), 1KHz.<br>Output: 600Ω/300mV(RMS), 1KHz.  |
| Music impedance/level    | Input: 20KΩ/300mV(RMS), 1KHz.<br>Output: 600Ω/150mV(RMS), 1KHz. |
| Line resistance          | 20Ω loop for power supply line.<br>200Ω loop for intercom line. |
| Amp. power ctrl. contact | YAW-RB: 240V AC 10A. 24V DC, 10A.                               |



# Handset Intercom

STATION

## 25 TD-H/B

### Door station



**IF-DA**  
Door station  
→ P.31



**DE-UR**  
Door station adaptor

**Power supply**  
**PS-1225S PS-1225UL PS-1225**  
→ P.103

### Sub station



**TD-1H/B**  
1-call sub

### Master station



**TD-3H/B**  
3-call master

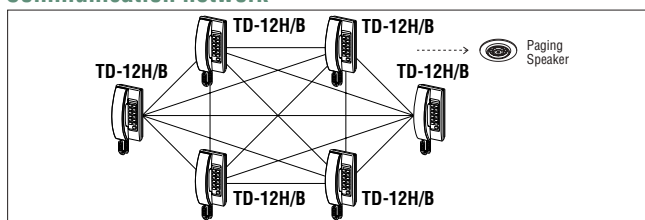


**TD-6H/B**  
6-call master

### Features

- All-master selective ring system
- Single-master configuration or intermix w/TD-1H/B
- Multi-conductor cable in loop
- Multi-talk channels
- Door station(s), audio or PanTilt video (max. 2)
- Zone paging, with or without talkback
- Music source connection. Page pretone cuts out music.

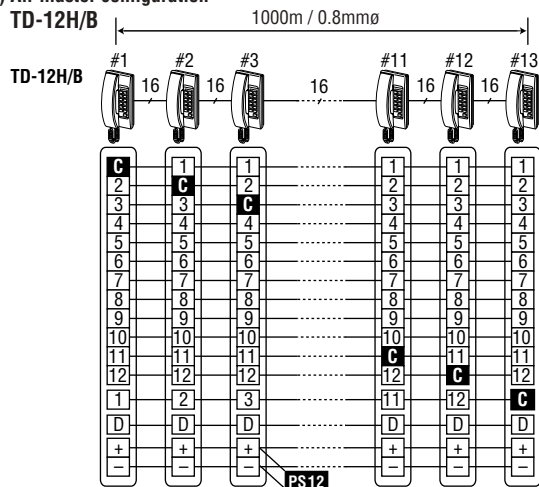
### Communication network



All-master configuration. Station selector & CALL to ring any other station.

### Wiring

#### (1) All-master configuration

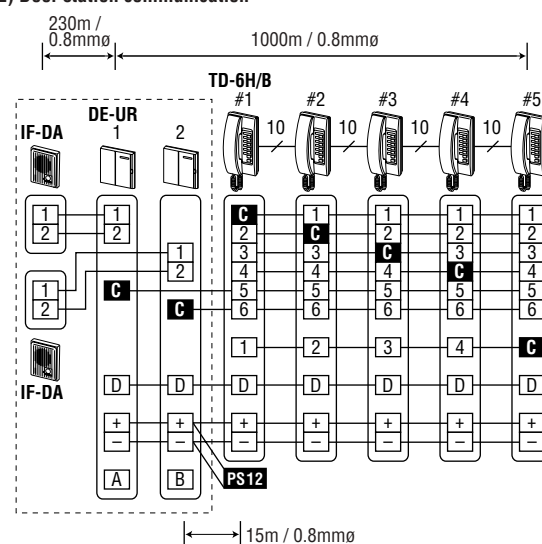


• Install main cable of max. conductors allowed for each TD-H/B station model.

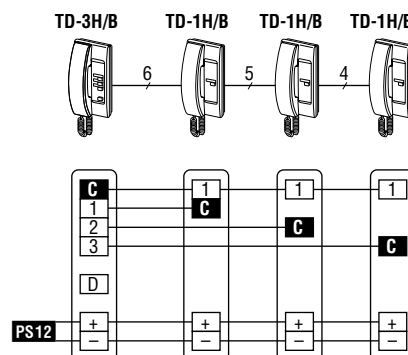
**PS** : PS-1225S, PS-1225UL, PS-1225 Terminal **D** : Door station

### Wiring

#### (2) Door station communication



#### (3) Single-master configuration



Terminal 5 for door 1, 6 for door 2. DE-UR's should be powered by power supply.





**TD-12H/B**  
12-call master

**TD-24H/B**  
24-call master



For desk-top or surface wall mounting, provide TDW-n/A terminal box w/1.5m cord.

**TDW-1/A**  
TD-1H/B terminal box  
**TDW-3/A**  
TD-3H/B terminal box  
**TDW-6/A**  
TD-6H/B terminal box  
**TDW-12/A**  
TD-12H/B terminal box  
**TDW-24/A**  
TD-24H/B terminal box

### Privacy type



**TD-6Z/A**  
6-call master station  
**TD-12Z/A**  
12-call master station

- 7 or 13 identical station, full trunk all-master configuration
- No break-in call
- Zone page(s) in lieu of station(s)

**Power supply**  
**PS-1225S PS-1225UL**  
**PS-1225**  
→ P.103

### Lineup



**PD-1**  
Zone page adaptor



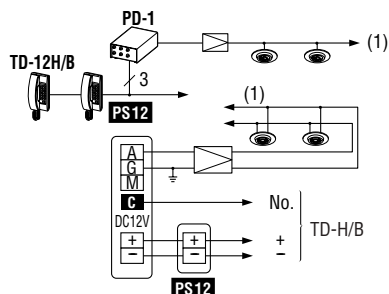
**PD-2**  
Zone page/talkback adaptor



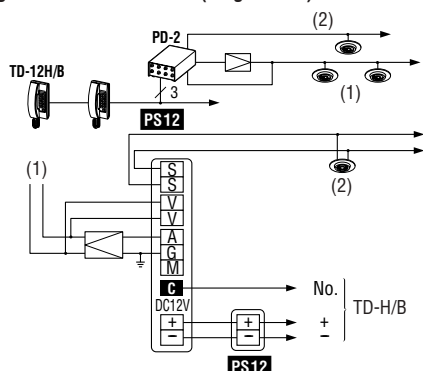
**RY-AC/A**  
External signaling relay  
→ P.101

### Wiring

#### (4) Straight paging w/PD-1 (single-zone)

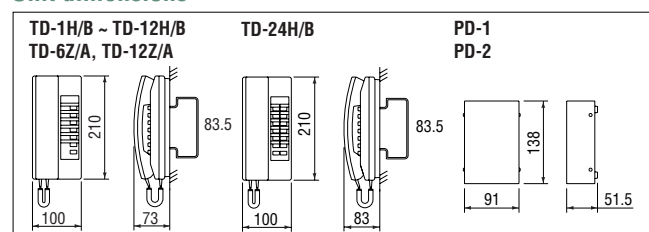


#### (5) Paging with talkback w/PD-2 (single zone)



(1) Paging Speakers (2) Talkback speakers **PS12** : PS-1225S, PS-1225UL, PS-1225

### Unit dimensions



### Specifications (TD-H/B)

|               |  |
|---------------|--|
| Power source  | 12V DC, 70mA per station.  |
| Power supply  | PS-1225S, PS-1225UL, PS-1225   |
| Communication | Depress a station selector 1~12 and CALL (or CALL A) to ring station 1~12 (or A1 ~ A12). Lift handset to reply. Door calls in w/standard or faster(B) intermittent tone, 2-1/2 sec. Pick up and depress the selector assigned. |
| Wiring        | 2 or 3 + no. TD-H/B in loop.<br>TD-1H/B: 4 wires. TD-3H/B: 7 wires.<br>TD-6H/B: 10 wires. TD-12H/B: 16 wires.<br>TD-24H/B: 28 wires.   |
| Distance      | TD-H/B stations 650m(0.65mmø) 1000m(0.8mmø)<br>DE-UR to door 150m(0.65mmø) 230m(0.8mmø)  |

### (TD-Z/A)

|               |   |
|---------------|---|
| Power source  | 12V DC, 90mA per channel                      |
| Power supply  | PS-1225S, PS-1225UL, PS-1225                  |
| Communication | Depress a selector and CALL to ring opponent. |
| Wiring        | 3 + no. TD-Z/A in loop.                       |
| Distance      | TD-Z/A stations 650m(0.65mmø) 1000m(0.8mmø)   |

### (PD-1,PD-2)

|                              |  |
|------------------------------|--|
| Power source                 | PD-1: 12V DC, 300mA.<br>PD-2: 12V DC, 48mA (talkback).                                   |
| Output                       | 5KΩ. Max. 1.5V   |
| Paging & music tone controls | Treble 12dB at 10KHz. Bass 12dB at 100Hz.  |
| Amp. input                   | AUX or PHONO 100K-500KΩ, 0.12~0.5V   |
| Music input                  | 17KΩ, 0.3V, 1KHz. for full output  |
| Tuner output                 | Audio output: Range 100mV~1.2V, 10KΩ or less   |
| Tape output                  | Low level output: Range 100mV~1.2V, 600Ω   |
| Talkback gain                | 40dB, 1KHz. at max. volume   |
| Environmental noise          | Less than 80dB (phon)  |
| Paging                       | Select an assigned selector # and page w/PAGE button depressed. Release to receive reply |
| Wiring                       | 3 wires to TD-H/B via power supply   |



# Integratable Audio & Video Security

MASTER

DOOR

8



120

AX

COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

## Master station



**AX-8MV**  
8-call color monitor master station  
**AX-8MV-W**  
(white)



**AX-8M**  
8-call audio master station



**AX-16SW**  
16-call add-on selector



**AX-8MV, AX-16SW**

## Central exchange unit



**AX-084C**  
Central exchange unit,  
4 masters and 8 doors

**AX-248C (Photo)**  
Central exchange unit,  
8 masters and 24 doors



**AX-320C**  
Add-on exchange unit,  
32 doors

**Power supply**  
**PS-2420S PS-2420UL**  
**PS-2420** → P.104

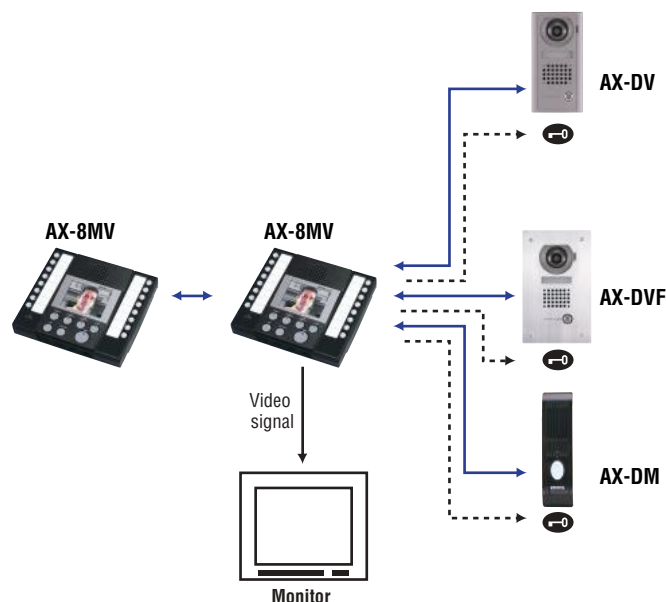
## Features

- Up to 120 video entrance stations and 8 master stations
- All wired on CAT5e, homerun cabling
- Total hands-free, auto-voice actuation, communication or Press-to-talk operation
- Two talk channels and two video channels.
- Communication privacy
- Masters available with 3.5 inch color TFT LCD
- Selective door release
- Master-to-master selective calling and All Call
- Standard or Priority call levels from door stations
- Scan monitoring: Hands-free audio/visual monitoring
- Video output from CEU and AX-8MV
- Integrate with CCTV, Access control etc.
- PC interface for programming and event logging
- Rack or wall mountable CEU
- Compatible with IE Series door stations
- Optional features: headset, footswitch, and PC remote control

## PC programming

| AX Setup Tool   |     |                |             |        |            |          |              |       |  |
|---|-----|----------------|-------------|--------|------------|----------|--------------|-------|--|
| File(E) Edit(E) Tool(T) Display(D) Help(H)                      |     |                |             |        |            |          |              |       |  |
| Exchange Unit/Master Station Time-Out GO Transfer/Communication |     |                |             |        |            |          |              |       |  |
| 3. Door   |     |                |             |        |            |          |              |       |  |
| Exchange No.  | No. | Location Name  | Video Audio | Series | Call Level | DR Relay | Scan Monitor | @Mst1 |  |
| 1   | 1   | Front Entrance | Video       | AX     | Priority   | N.O.     | Enable       | On    |  |
|   | 2   | Parking        | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |
|   | 3   |                | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |
|   | 4   |                | Video       | AX     | Priority   | N.O.     | Enable       | On    |  |
|   | 5   |                | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |
|   | 6   |                | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |
|   | 7   |                | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |
|   | 8   |                | Video       | AX     | Normal     | N.O.     | Enable       | On    |  |

## Communication network



— Calling & communication (w/video from door)

- - - Door release



## Door station



**AX-DV**  
Color video door station  
surface mount



**AX-DV-P**  
Color video door station  
w/space for embed  
proximity reader  
surface mount



**AX-DVF**  
Color video door station  
flush mount



**AX-DVF-P**  
Color video door station  
w/space for embed  
proximity reader  
flush mount



**AX-DM**  
Audio door station  
Mullion type



**IF-DA**  
Audio door station



**IE-JA**  
Audio door station

## Lineup



**EL-12S**  
Electric door strike  
→ P.101

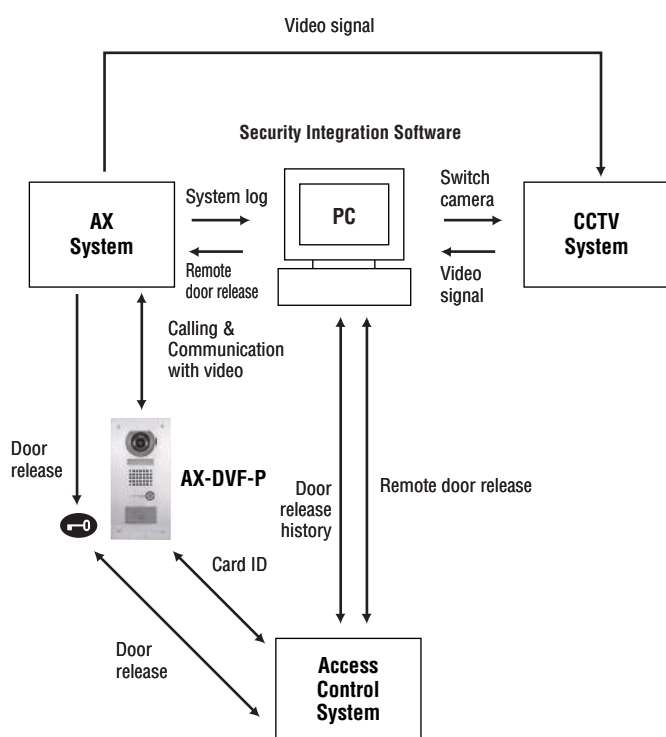


**AC-10S**  
Access control  
keypad,  
surface mount  
→ P.99

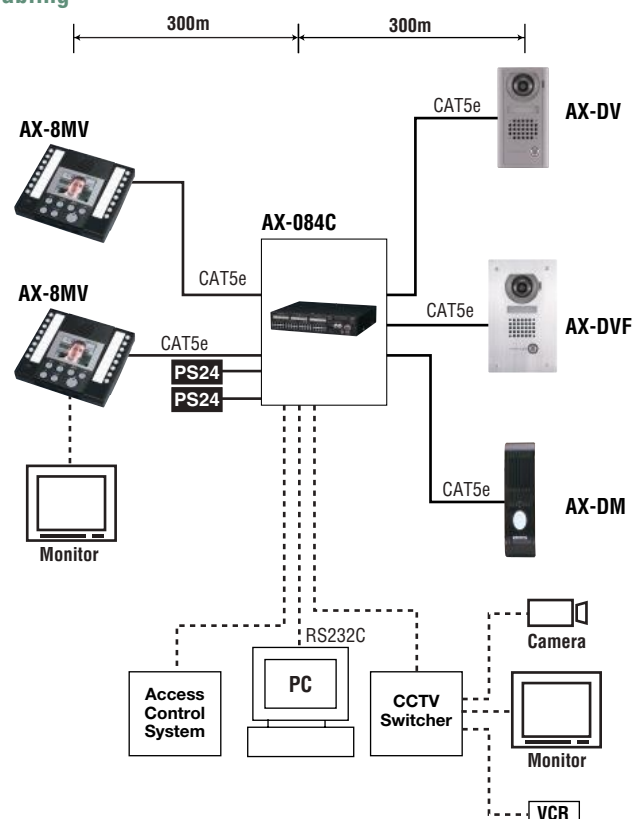


**AC-10F**  
Access control  
keypad,  
flush mount  
→ P.99

## System Integration



## Cabling





## COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

## COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM










## COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

## COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM



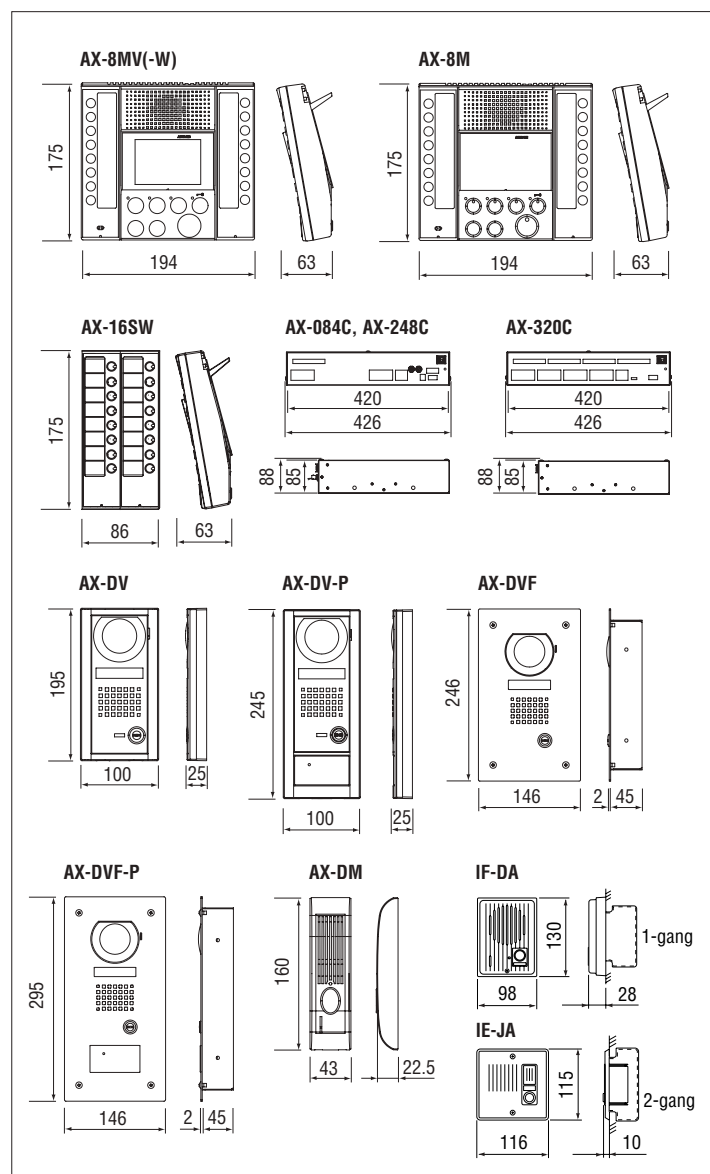


## Components

|   |  |   |  |   |   |         |   |
|---|--|---|--|---|---|---------|---|
| <br><b>AX-DV</b> | <br><b>AX-DVF</b> | <br><b>AX-DM</b> | <br><b>AX-8MV</b><br>(AX-8M audio only) | <br><b>AX-16SW</b> | <br><b>AX-084C or AX-248C</b> |         | <br><b>AX-320C</b> |
| Number of door stations   |  |   | Number of master stations  | Number of add-on selectors per master   | Number of central exchange unit   |         | Number of add-on exchange units   |
|   |  |   |  |   | AX-084C   | AX-248C |   |
| 1 ~ 8   |  |   | up to 4  | —   | 1   | —       | —   |
| 9 ~ 24  |  |   | up to 8  | 1   | —   | 1       | —   |
| 25 ~ 40   |  |   | up to 4  | 2   | 1   | —       | 1   |
| 41 ~ 56   |  |   | up to 8  | 3   | —   | 1       | 1   |
| 57 ~ 72   |  |   | up to 4  | 4   | 1   | —       | 2   |
| 73 ~ 88   |  |   | up to 8  | 5   | —   | 1       | 2   |
| 89 ~ 104  |  |   | up to 4  | 6   | 1   | —       | 3   |
| 105 ~ 120   |  |   | up to 8  | 7   | —   | 1       | 3   |

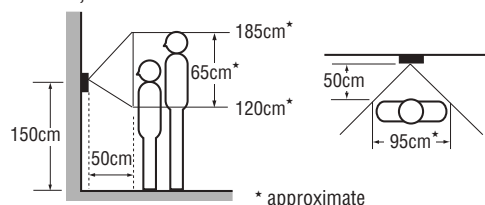
NOTE: Use the AX-248C for systems with more than 4 master stations (may effect the required quantity of AX-320C).  
2 pcs of power supplies are required for video system.

## Unit dimension



## Image view area

- AX-DV, AX-DVF
- AX-DV-P, AX-DVF-P



## Specifications

|                      |  |
|----------------------|--|
| Power source         | 24V DC, 2A (Two Power supplies required per video system)  |
| Power supply         | PS-2420S, PS-2420UL, PS-2420   |
| Current consumption  | AX-084C: Video (Max.) 650mA, Audio (Max.) 700mA<br>AX-248C: Video (Max.) 1150mA, Audio (Max.) 1250mA<br>AX-320C: Video (Max.) 280mA, Audio (Max.) 180mA                                    |
| Calling              | Normal call: an intermittent tremolo<br>Priority call: a rapid intermittent tremolo<br>Approx. 10-600 sec. or infinite   |
| Communication        | AUTOMATIC (Hands-free); To activate, momentarily press TALK button.<br>MANUAL (Press-to-talk/Release-to-listen); To activate, press TALK button for 1 sec. or more.<br>Approx. 30-600 sec. |
| Video monitor        | 3.5 inch direct view TFT color LCD   |
| Scanning lines       | 525 lines  |
| Night viewing        | Up to 30cm from camera, with white LED projected, background beyond 30cm cannot be seen.   |
| Door release contact | 24V AC/DC, 0.5A  |
| Outside video output | AX-084C, 248C: NTSC standard 1Vpp (0.7-1.4Vpp)<br>BNC x 2<br>Switching signal: Open collector output<br>24V DC, 30mA<br>RJ-45 x 2<br>AX-8MV: NTSC standard 1Vpp (0.7-1.4Vpp)               |
| Wiring               | Homerun CAT5e wire to CEU  |
| Wiring distance      | CEU to door: 300 m (CAT5e)<br>CEU to master: 300 m (CAT5e)   |



# Commercial Security Intercom

MASTER

SUB

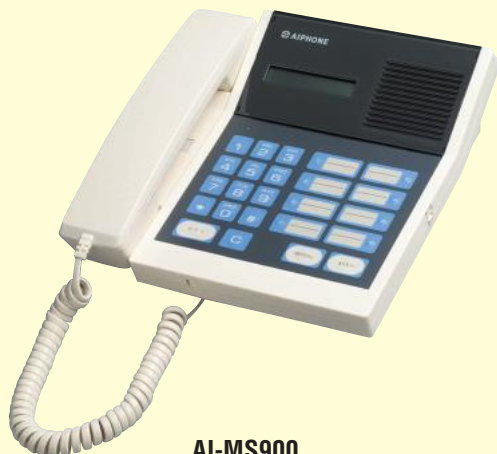
64

1,024

# AI-900

COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

## Master station



**AI-MS900**  
Master station  
→ P.77

## Sub station



**AI-RS150**  
Substation, indoor  
→ P.77



**AI-RS170**  
Substation, outdoor  
→ P.77



**AI-RS160**  
Substation, indoor  
→ P.77

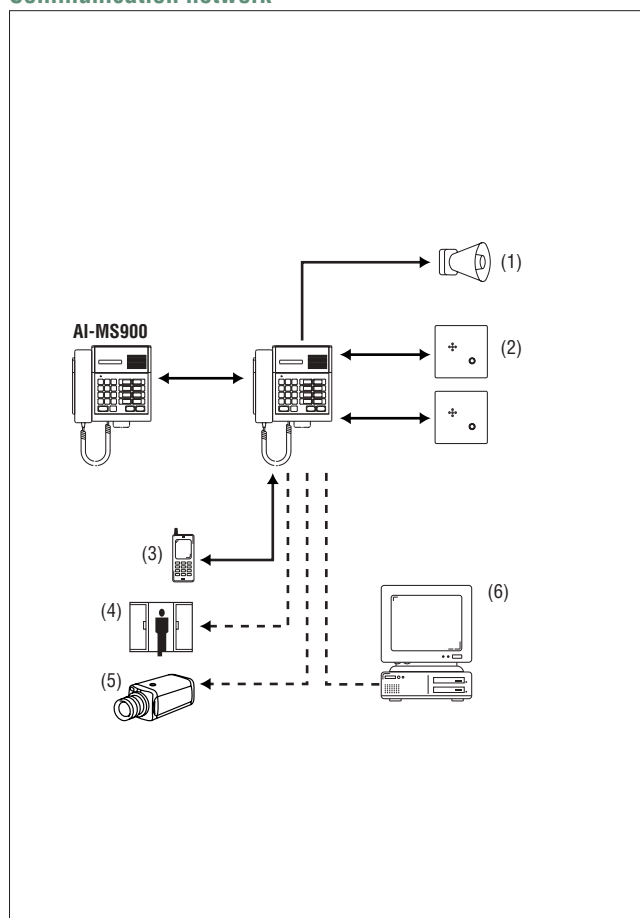


**AI-RS180**  
Substation, outdoor  
emergency  
→ P.77

## Features

- Flexible All-modular construction. Expansion options using interface and function cards.
- Sub-to-master communication by voice switch or PTT-activated talk-back. Master-to-master by full-duplex handsets.
- Four different substations for specific installation conditions.
- Provides a speaker and call button.
- Basic conversation plus full range of exchange functions, including; Call forwarding, Scan monitoring, Emergency conference, Conversation recording by way of external equipment, and Paging by way of an external amplifier.
- Emergency calls from any substation at a central security control room.
- Efficient voice recording at ea. master station.
- Used in combination with CCTV, access control, emergency broadcast systems or other security equipment.

## Communication network



↔ Calling & Communication

(1) Speaker (2) Substations (3) Cordless Phone (4) Access Control (5) CCTV  
(6) Personal computer. PC Link with programming and monitoring software.





**AI-900MF**  
Main frame  
→ P.78



**AI-PU200**  
Power transformer unit  
→ P.78

## Mounting accessories

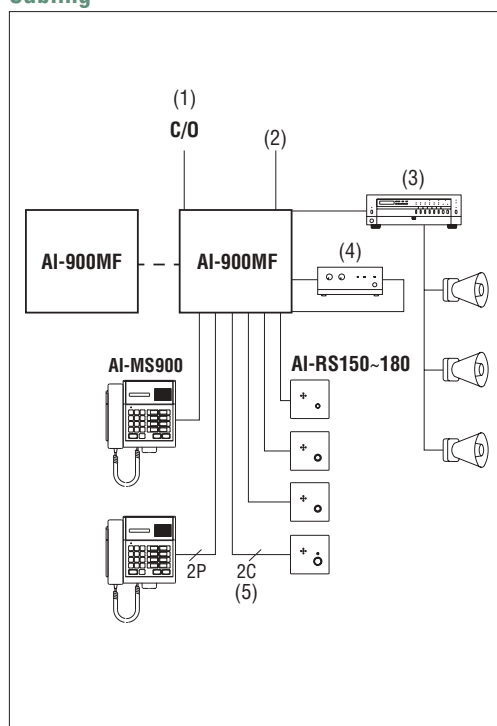


**AI-YC303**  
AI-900MF wall-mounting  
bracket  
→ P.78



**AI-PN100B**  
AI-PU200 rack-mount  
panel  
→ P.78

## Cabling



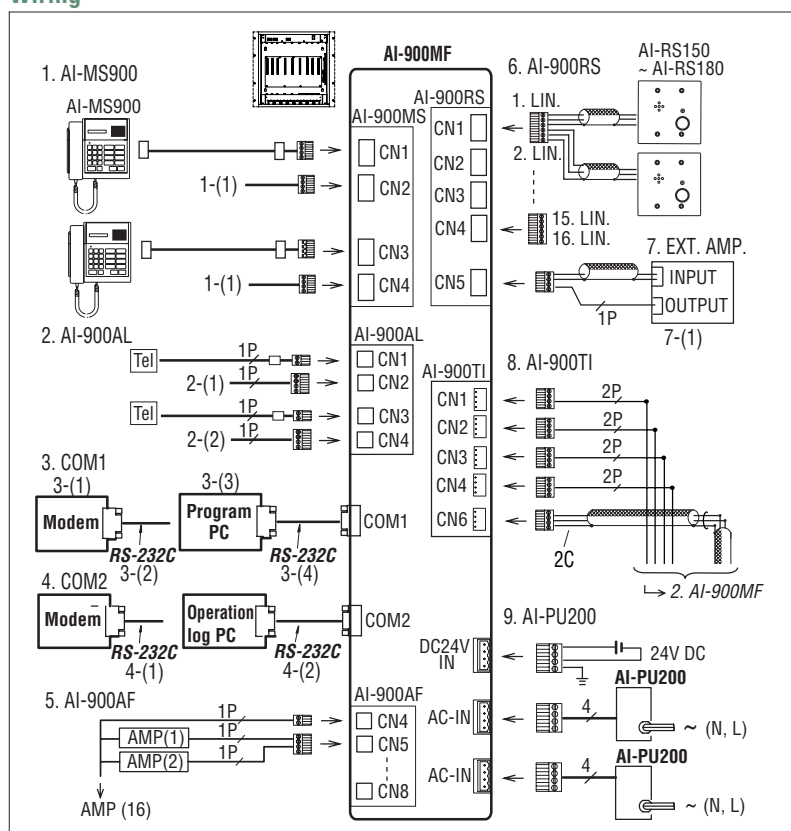
• **Basic system consists of;** 4 Master stations, 64 Substations and AI-900MF Main Frame with Interface Cards; Master(1), Telephone(1), Substation(4), Outside line(1), Audio function(1), and power unit(2).

• **To double the size of the system;**

Two Tie-line I/F cards are required (after that, add one I/F card for each add'l main frame).

(1) Outside line (2) PC (for programming and system maintenance) (3) External paging equipment (4) Substation paging amplifier (5) shielded

## Wiring



1. Master station Interface card 1-(1)To External Record device.

2. Telephone Interface Card 2-(1),(2)To External Recording device 1, 2.

3. Programming PC Connection COM1 3-(1) Via Modem. 3-(2) RS-232C cross cable. 3-(3) Direct connection. 3-(4) RS-232C straight cable.

4. Operation Log PC Connection COM-2 4-(1) RS-232C cross cable. 4-(2) RS-232C straight cable.

5. Audio Function Card (for paging) AMP(1)-(16): Amplifier.

6. Substation Interface Card 1.LIN.-16.LIN.: LINE1-16.

7. External amplifier 7-(1) Paging amplifier.

8. Tie-Line Interface Card Exchange Interconnection 8-(1) 2C shielded (data line).

9. AI-PU200 Power Transformer.



# Commercial Security Intercom

## AI-900 Components

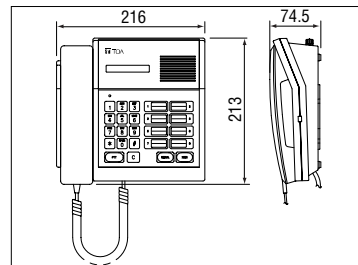
### Master station



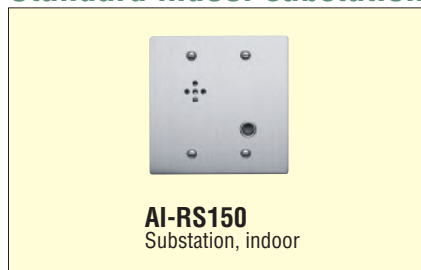
#### Features

The AI-MS900 can initiate or receive calls from programmed substations. Equipped with Push-to-Talk button for simplex communication, vox operated handset, redial and transfer keys, and eight auto-dial keys. Alphanumeric display for caller ID. Two-twisted pair wiring to Main Frame.

#### Unit dimensions



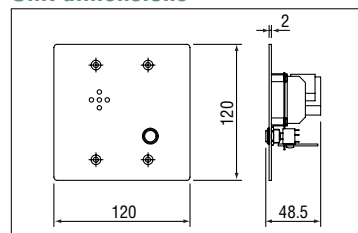
### Standard indoor substation



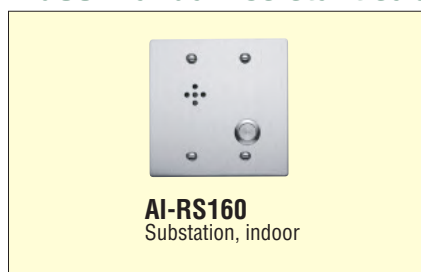
#### Features

The AI-RS150 is built with a black resin call button and 14-gauge stainless steel. It can call and converse with the programmed master stations. All substation models are wired with a shielded pair to the Main Frame.

#### Unit dimensions



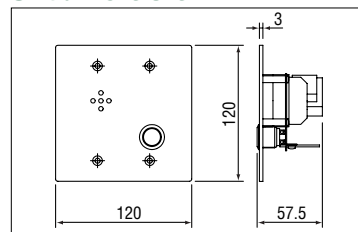
### Indoor vandal resistant substation



#### Features

The AI-RS160 is made with heavy 11-gauge stainless steel and a vandal resistant stainless steel call button. Calls and communicates with programmed master stations or telephones.

#### Unit dimensions



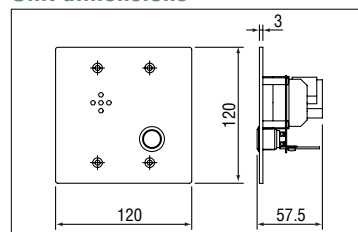
### Outdoor vandal resistant substation



#### Features

The AI-RS170 is equipped like the AI-RS160, but with the internal components protected with a synthetic rubber sealant, making it weather resistant. Calls and communication with programmed master stations or telephones.

#### Unit dimensions



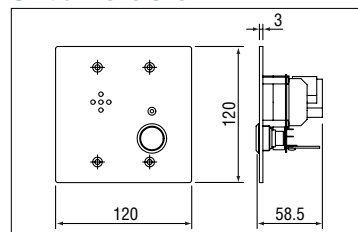
### Outdoor emergency substation



#### Features

The AI-RS180 is vandal and weather resistant with a red aluminum call button, call assurance LED, and an output to control an external relay. Used for ADA compliance or emergency call applications.

#### Unit dimensions





## Main frame



**AI-900MF**  
Main frame



**AI-PU200**  
Power transformer unit



**AI-PN100B**  
AI-PU200 rack-mount  
panel



**AI-YC303**  
AI-900MF wall-mounting  
bracket

### Features

The AI-900MF Main Frame can accommodate the following features with the installation of the corresponding circuit cards. Up to 4 master stations or single line phones (2 masters per AI-900MS card; 2 phones per AI-900AL card); up to 64 substations; up to 2 CO lines; paging to 19 zones; tie line connection to additional Main Frame, RS-232 input/output for system programming and event logging.

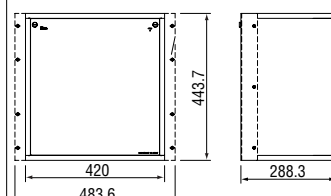
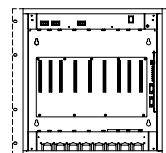
The AI-PU200 has two 20V, 2.5A AC outputs. One unit is required for every two AI-900RS cards installed in the Main Frame.

The AI-PN100B is used to rack mount two AI-PU200 power transformers side-by-side.

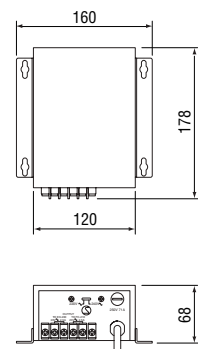
The AI-YC303 is used to wall mount the AI-900MF Main Frame.

### Unit dimensions

**AI-900MF**



**AI-PU200**



## Interface cards

### AI-900MS Master Station Interface Card

One or two cards per Main Frame. The AI-900MS card provides connection and audio recording outputs for one or two master stations. With two cards installed, four master stations can be connected to one Main Frame.

### AI-900AL Telephone Master Station Card

One or two cards per Main Frame, used in lieu of AI-900MS card. The AI-900AL allows a standard telephone with caller-ID capabilities to be used in place of a master station for communication functions. One or two phones per card, taking the place of an AI-900MS card supporting two master stations. Equipped with audio recording outputs for each telephone connected.

### AI-900RS, Substation Interface Card

Up to four cards per Main Frame. Each AI-900RS card supports up to 16 substations, and up to 64 substations per Main Frame with four cards installed. Connect subs with simple two conductor shielded wire homerun to the Main Frame.

### AI-900CO C/O Telephone Line Interface Card

One card per Main Frame. The AI-900CO allows the connection of up to two outside phone lines, with audio recording outputs for each line. Integration with outside lines allows communication between sub or master stations and standard telephones, cell phones, or pagers.

### AI-900AF Audio Function Card

Connection of external PA amplifier for paging. Up to four inputs from audio sources and 16 outputs to external paging zones. Multiple zones or all zones can be selected and paged simultaneously.

### AI-900TI Tie Line Interface Card

One card per Main Frame in multi-exchange system. The AI-900TI card is used to interconnect multiple Main Frames, expanding the capacity and functionality of the system. Up to four voice paths between Main Frames.

### AI-900DI Direct-Select/Master Station Interface Board

Used to create a direct-select style master station in place of a digital master. Used with AI-910DI for individual selector buttons and call-in LEDs. Also allows integration with external security systems via AI-910DI board.

### AI-910DI Direct-Select Input/Output Relay Board

The AI-910DI is used in conjunction with the AI-900DI board to provide relay outputs to control external devices or systems. Each board contains 32 programmable relays, and multiple boards can be used for up to 1024 relays. Use for integration with access control and/or video surveillance systems.

## Specifications (AI-900)

|                         |  |
|-------------------------|--|
| Power Source            | 20V AC, 2.5A, provided by AI-PU200; 24V DC provided by external 5A power supply not supplied Aiphone |
| Current consumption     | 7A   |
| Communication Modes     | Duplex, half-duplex, and Push-to-Talk  |
| Serial Ports            | RS-232 compliant, D-sub connector ( 9-pin female) 2 ports  |
| Operating Temperature   | -Indoor Units 0°C~40°C<br>-Outdoor Units -10°C~55°C  |
| System Capacity         | 4 master stations; 64 substations per Main Frame   |
| Master Station Mounting | Wall or desk mount   |
| Master Station Wiring   | 2 twisted pairs, homerun to Main Frame   |
| Substation Mounting     | Flush mount in 2-gang box  |
| Substation Wiring       | 2 conductor shielded, homerun to Main Frame  |
| Wiring Distance:        |  |
| - Master to AI-900MS    | 900m(0.5mmø). 1500m(0.65mmø)   |
| - Subs to AI-900RS      | 500m(0.5mmø). 800m(0.65mmø)  |
| - Between Main Frames   | 600m(0.5mmø). 1000m(0.65mmø)   |



# Security Window Intercom System

SERVICE SIDE

PUBLIC SIDE

1



1

# IMU-100

COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

Service Side



IMU-100  
+  
IME-100

IMU-100  
Main kit



Operation unit



Main unit



IME-100  
Gooseneck microphone

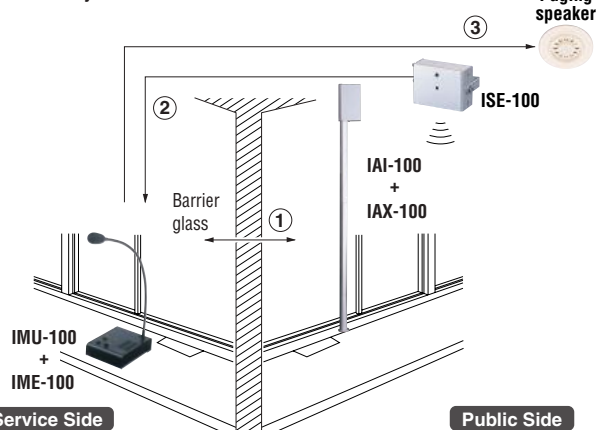
Power supply PS-2420S PS-2420UL PS-2420 → P.104

## Features

- First in industry! Using an acoustic tube with noise cancelling microphone
- Voice-actuated hands-free communication
- Flexible gooseneck type microphone
- Optional Mono type headset (ø3.5 plug)
- Detection sensor switches automatically to communication mode
- Separate speaker system using an optional microphone
- Paging feature for announcements
- Thin shape of the acoustic tube does not obstruct the field of vision
- Holes in the barrier glass are not necessary to install

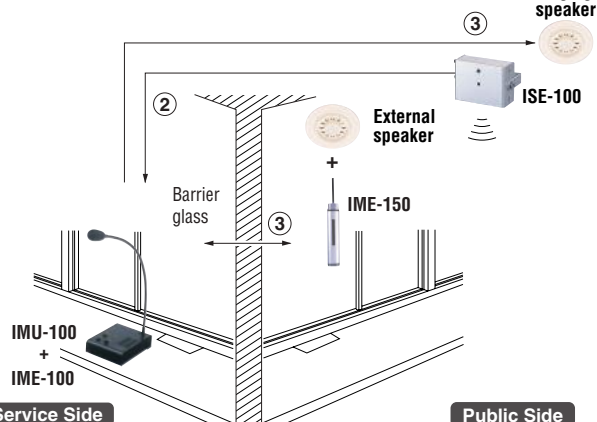
## Communication network

### Acoustic tube system



- ① Voice-actuated hands-free communication
- ② Automatically switch to communication mode
- ③ Paging

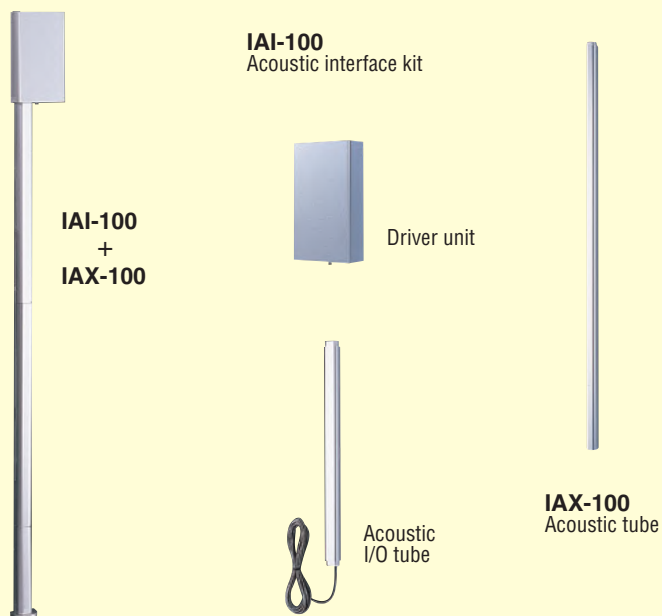
### Separate speaker system



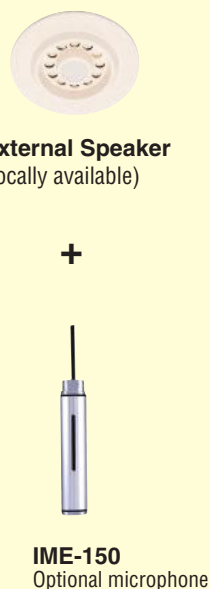


Public Side

Acoustic tube system



Separate speaker system



Lineup

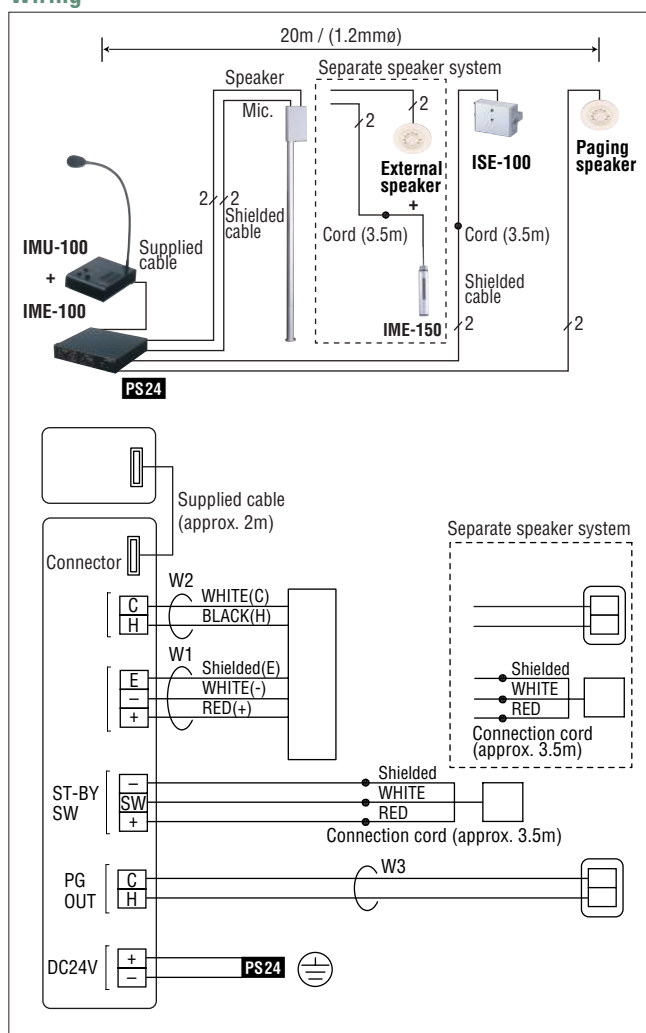


ISE-100 Sensor



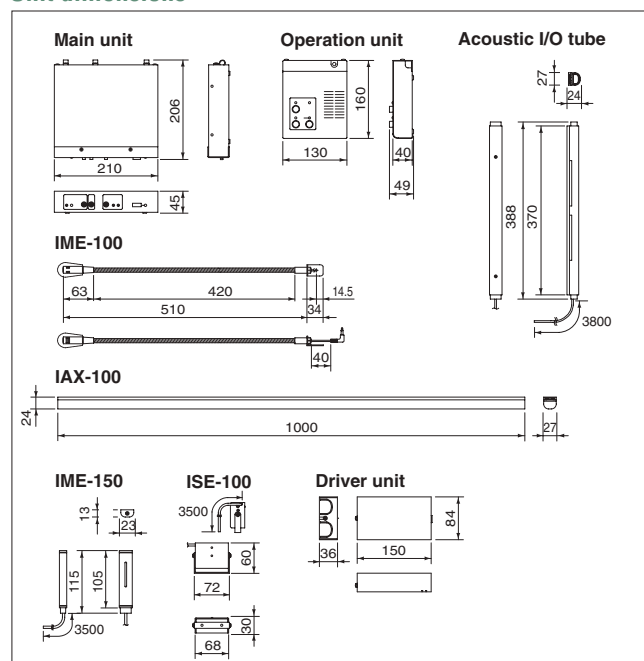
Paging speaker (locally available)

Wiring



PS24 : PS-2420S, PS-2420UL, PS-2420

Unit dimensions



Specifications (IMU-100)

|                       |  |
|-----------------------|--|
| Power source          | 24V DC   |
| Power supply          | PS-2420S, PS-2420UL, PS-2420   |
| Consumption           | 120 mA (standby) 780 mA (maximum)  |
| Operating temperature | 0°C to 40°C  |
| Communication         | Voice-actuated communication   |
| Headset               | Transmit output: 3 W 4 $\Omega$ , Receive output: 1.5 W 16 $\Omega$<br>$\phi$ 3.5 plug, Impedance: 32 $\Omega$ , Rated input: 40 mW or more, Maximum input: 100 mW or more |
| External speaker      | Impedance: 4 to 8 $\Omega$ , Rated input: 3 W or more<br>Maximum input: 6 W or more  |
| Paging speaker        | Impedance: 4 to 8 $\Omega$ , Rated input: 3 W or more<br>Maximum input: 6 W or more  |



# Master / Sub Intercom

MASTER

SUB

1

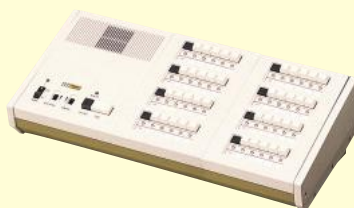
120

NEM

## Master station



**NEM-10/C**  
10-call master



**NEM-20/C**  
20-call master

**NEM-30/C**  
30-call master

**NEM-40/C**  
40-call master



**NEM-10A/C**  
10-call master



**NEM-20A/C**  
20-call master

**NEM-30A/C**  
30-call master

**NEM-40A/C**  
40-call master

## Power supply

PS-2420S PS-2420UL PS-2420 → P.104

## Sub station



**NB-L**  
Ceiling sub station



**NA-NE**  
Sub station



**NA-A**  
Sub station

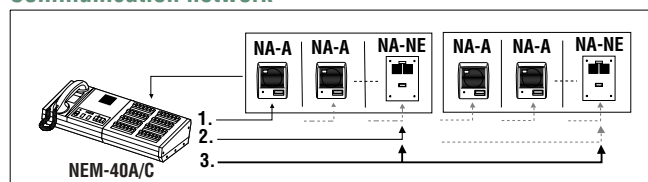


**NA-AN**  
Privacy sub station

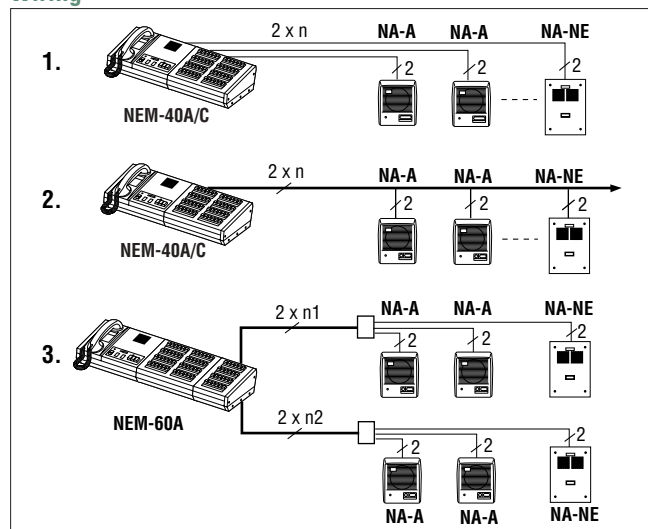
## Features

- Lamp memory intercom: Sub's call-in with tone & light
- Press-to-talk or handset with voice actuation
- Selective or group call of 10 subs
- All Call
- Pre-tone sounding at sub, when selected
- Optional accessories for health care applications
- Expand beyond 40 stations with add-on selectors

## Communication network

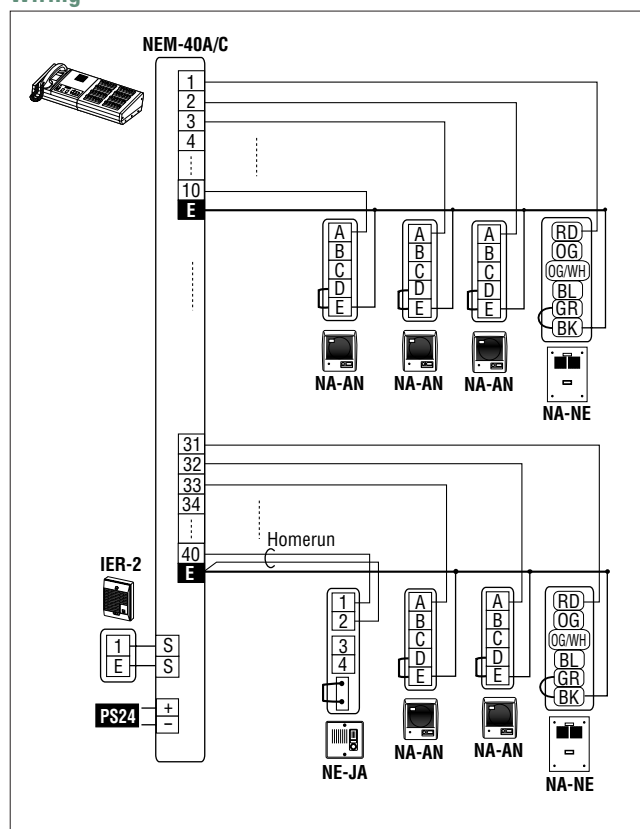


## Wiring



1. Run a parallel cable to each NA sub station (in the same conduit).
2. Run a multi-conductor cable(s) throughout system.
3. Run multi-conductor cables up to junction box, then run a parallel cable to each NA sub station.

## Wiring



PS24 : PS-2420S, PS-2420UL, PS-2420

RD: Red OG: Orange OG/WH: Orange/White BL: Blue GR: Green BK: Black  
IMPORTANT: For NE-JA sub('s), homerun wires to secure stable calling and distance of 270m w/1.0mmø.

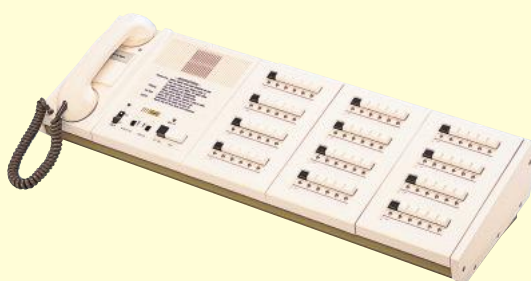




**NE-JA**  
Flush sub station



**NA-T/A(\*2)**  
Handset sub station



**NEM-50**  
50-call master  
**NEM-60**  
60-call master  
**NEM-70**  
70-call master  
**NEM-80**  
80-call master  
**NEM-90**  
90-call master  
**NEM-100**  
100-call master  
**NEM-110**  
110-call master  
**NEM-120**  
120-call master

**NEM-50A**  
50-call master  
**NEM-60A**  
60-call master  
**NEM-70A**  
70-call master  
**NEM-80A**  
80-call master  
**NEM-90A**  
90-call master  
**NEM-100A**  
100-call master  
**NEM-110A**  
110-call master  
**NEM-120A**  
120-call master

## Lineup



**NAR-6A**  
Call button



**NB-U**  
Music adaptor  
→ P.98



**NBR-7AS**  
Bathroom pullcord,  
moisture-resistant



**NEW-5**  
Dual master  
call adaptor  
→ P.98



**IER-2**  
Call extension  
→ P.101



**NBJ-20(\*1)**  
Call switching  
device  
for NEM-10/C,  
20/C  
→ P.98

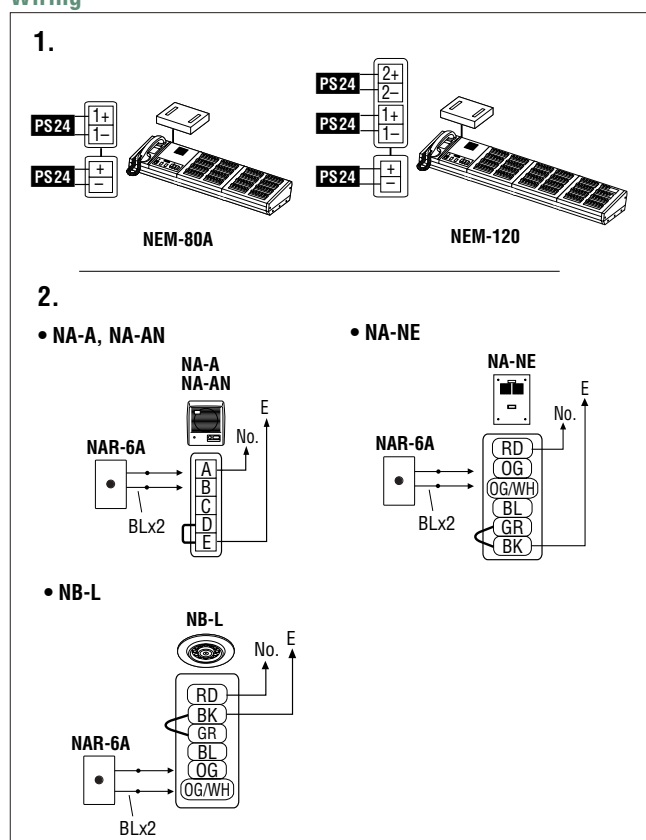
**NBJ-20B(\*1)**  
Call switching  
device  
for NEM-10A/C,  
20A/C  
→ P.98

**NBJ-40(\*1)**  
Call switching  
device  
for NEM-30/C,  
40/C  
→ P.98

**NBJ-40B(\*1)**  
Call switching  
device  
for NEM-30A/C,  
40A/C  
→ P.98

(\*1) NBJ-20/40, NBJ-20B/40B: Not available in Europe (\*2) NA-T/A: Not available in Europe, Australia, nor New Zealand

## Wiring



### 1. Power supply requirements

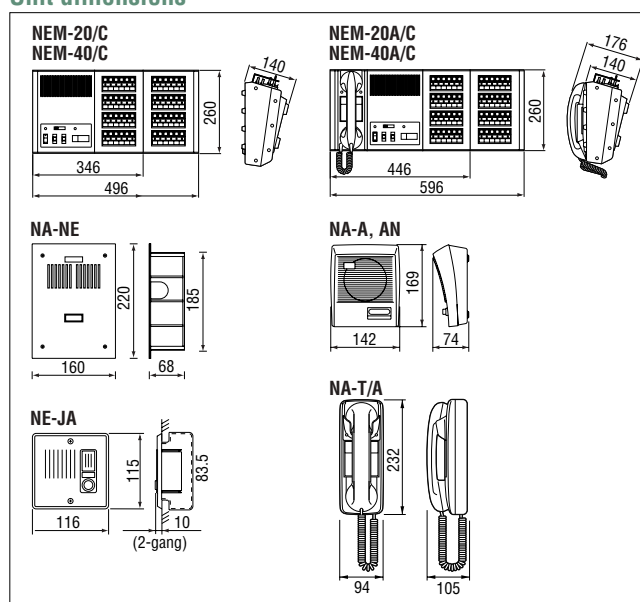
One power supply for up to 40-call master  
Two power supplies for 50- to 80-call master  
Three power supplies for 80- to 120-call master

### 2. Adding call button to NA sub stations

RD: Red BK: Black GR: Green BL: Blue OG: Orange  
OG/WH: Orange/White

**PS24** : PS2420S, PS-2420UL, PS-2420

## Unit dimensions



## Specifications (NEM-40A/C)

|               |   |
|---------------|---|
| Power source  | 24V DC, 45W max. 2.5W standby (NEM-40/C)  |
| Power supply  | PS-2420S, PS-2420UL, PS-2420 (40-call)  |
| Communication | Sub calls in w/tone & LED latching at master. Press TALK button to transmit, release to listen, or lift handset. At sub, pretone and voice when selected. Talk hands-free.<br>Press ALL CALL button to activate all sub stations. |
| Output        | 500mW max., adjustable.<br>All Call: 6W, 12W.<br>Selectively up to 10 subs w/TALK: 3W   |
| Wiring        | 2 wires per sub, non-twisted (1 common + no. Subs)  |
| Distance      | NEM to NA subs 130m(0.65mmø) 200m(0.8mmø)   |



## Master / Sub Intercom

MASTER

2

SUB

100

TC-M

## Master station



**TC-10M**  
10-call master



**TC-20M**  
20-call master

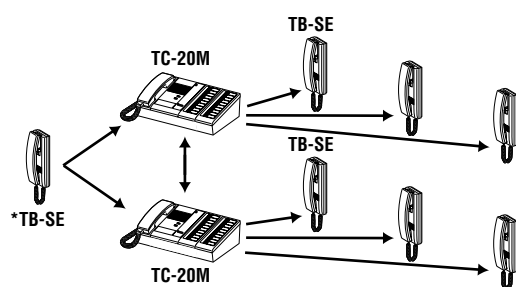


**TC-20M + TC-40G**  
60-call

## Features

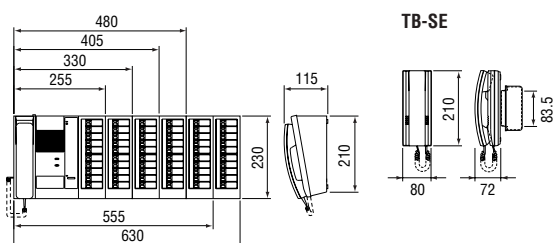
- Expandable internal telephone intercom
- One or dual master configuration
- Tone & LED call-in, staying on until answered
- Additional buzzer at TB-SE (w/relay)
- TRANSFER button on TC-M for communication between two TB-SE subs

## Communication network

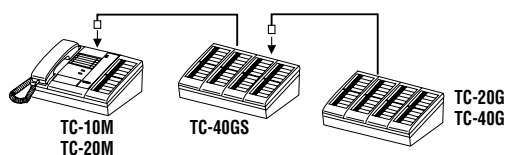


\*TB-SE : Sub station for two-master call.

## Unit dimensions



## Wiring



The TC-40GS is equipped with socket to connect the second add-on selector TC-20G or TC-40G.

## Specifications (TC-M)

|               |  |
|---------------|--|
| Power source  | 18V DC, 350mA.<br>15~16V AC, 50/60Hz, 750mA.   |
| Consumption   | 6W. 3W standby.  |
| Power supply  | PS-1820S, PS-1820UL, PS-1820, AC transformer.  |
| Communication | Pick up TB-SE handset. Rings TC-M, w/tremolo & LED, staying. At TC-M, pick up and press a lit selector to reply. |
| Wiring        | 2 parallel wires per TB-SE, non-polarized.   |
| Distance      | TC-M's 200m(0.65mmø) 480m(1.0mmø)<br>TC-M~TB-SE 400m(0.65mmø) 900m(1.0mmø)                                       |



### Add-on selector



**TC-20G**  
20-call add-on selector



**TC-40G**  
40-call add-on selector

**TC-40GS**  
W/add'l 20-/40-call expansion

### Sub station



**TB-SE**  
Sub station

## Power supply

**PS-1820S**  
**PS-1820UL**  
**PS-1820**  
→ P.104

## Lineup

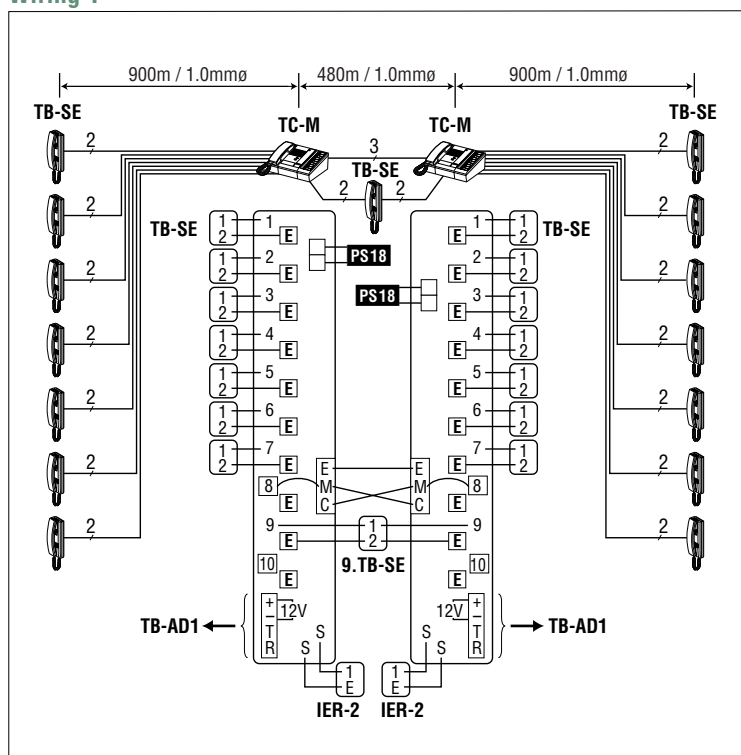


**IER-2**  
Call extension  
→ P.101



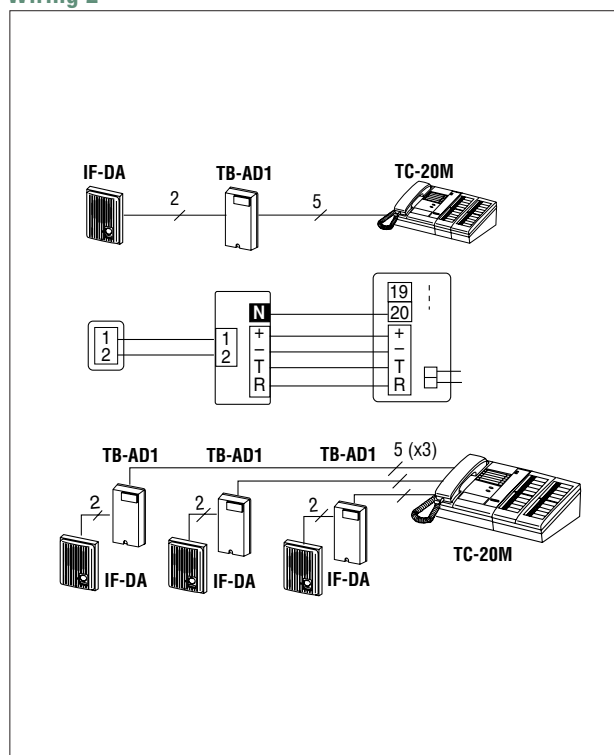
**TAR-3**  
External signaling  
relay  
→ P.102

## Wiring 1



- Run 2 parallel wires per TB-SE. Use any E terminal for max. three TB-SE's.
- Do not parallel TB-SE sub wires, or door station wires (in dual-TC-M system).

## Wiring 2





# Master / Sub Intercom

## DOOR 10 ROOM 1 TC-M & TB-AD10

### Door station



**IF-DA**  
Door station  
→ P.31

### Master station



**TC-10M**  
10-call master

**TC-10MD\***  
10-call master  
for door release  
\*Not available in Europe

**TB-AD10**  
10-call door adaptor

### Door adaptor



**TB-AD1**  
1-call door adaptor



**TB-ADD\***  
10-way door release adaptor  
\*Not available in Europe

### Lineup



**IER-2**  
Call extension  
→ P.101



**TAR-3**  
External signaling  
relay  
→ P.102



**EL-12S**  
Electric door strike  
→ P.101

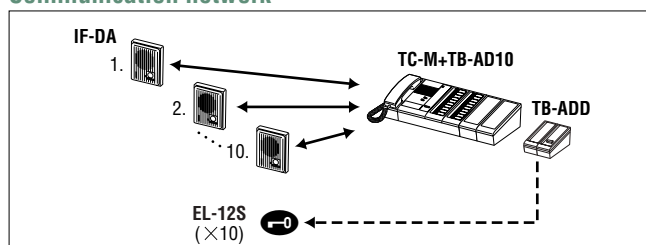
### Power supply

**PS-1820S PS-1820UL PS-1820**  
→ P.104

### Features

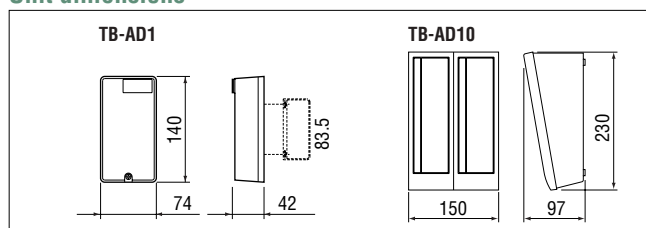
- Single or multiple audio door communication, expandable
- Optional selective door release control

### Communication network

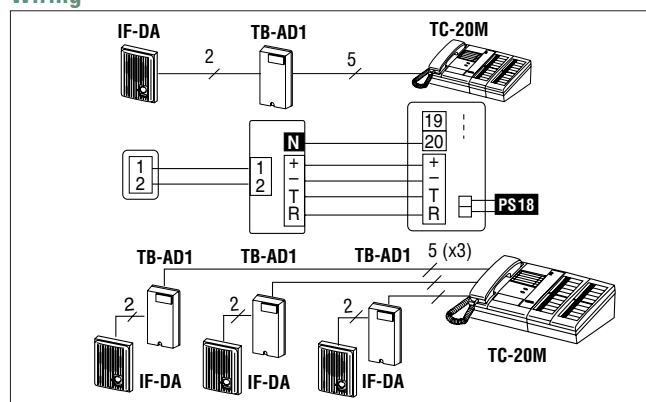


Pre-tone sounding or mute selectable at TB-AD10.

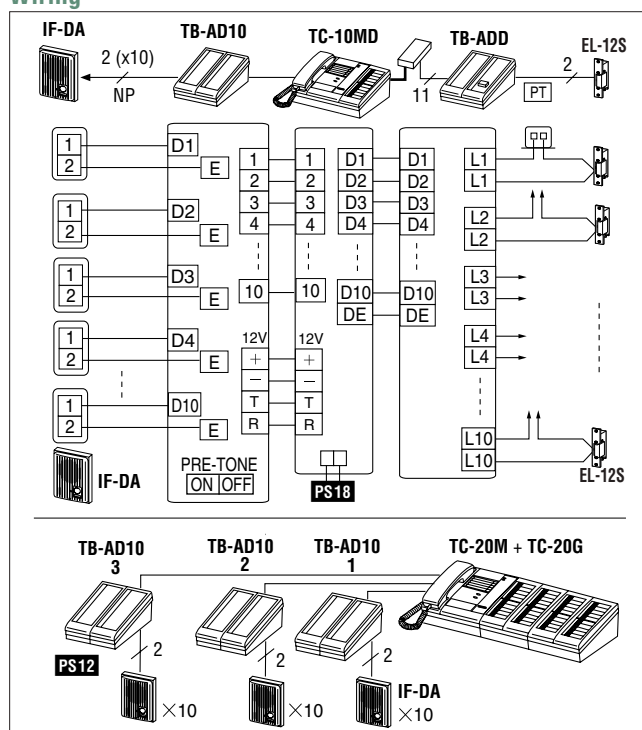
### Unit dimensions



### Wiring



### Wiring



Multiple TB-AD10 installation; Add a power supply for TB-AD10 #3 or after.  
**PS18** : PS-1820S, PS-1820UL, PS-1820

### Specifications (TB-AD10)

|               |  |
|---------------|--|
| Power source  | TB-AD10: 12V DC, supplied by TC-M.   |
| Door capacity | 10(TB-AD10). 1(TB-AD1).  |
| Communication | Door calls in w/tremolo & LED 40 sec. Pick up and depress LED lit selector. Pretone sounds at door, or silenced. |
| Wiring        | 2 parallel wires to door, non-polarized.<br>4 common + no. doors, TC-M to adaptor.                               |
| Distance      | TC-M to TB-AD10 65m(0.65mmø) 150m(1.0mmø)<br>TB-AD10 to IF-DA 150m(0.65mmø) 360m(1.0mmø)                         |



## Market-com station



**MC-60/4A**  
Market-Com station



**MC-60/4B**  
Market-Com desk station  
\*Not available in Europe

## Market-com adaptor



**MC-A/A**  
Zone page adaptor

## Lineup

**Paging speaker**  
w/built-in transformer  
(locally available)

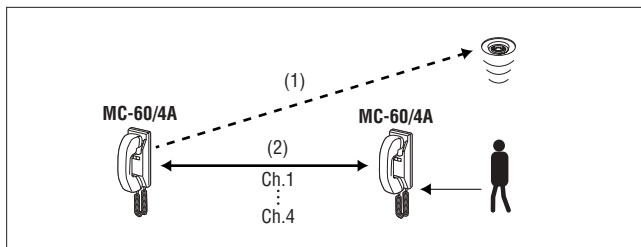
## Power supply

**PS-2420S PS-2420UL**  
**PS-2420** → P.104

## Features

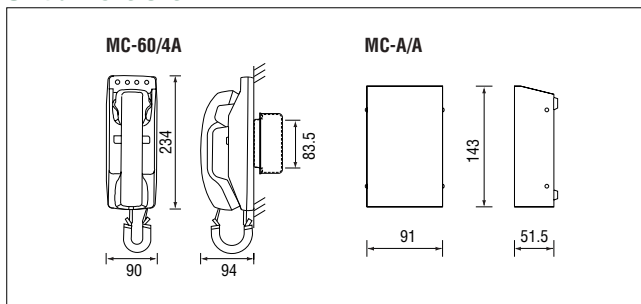
- Max. 60-station paging & communication system
- Selective 4 talk channels with in-use LED's
- Conference call among 3 stations
- Music cutout during paging
- Reinforced modular coil cord

## Communication network



(1) Paging (2) Select a channel 1~4 paged, and communicate.

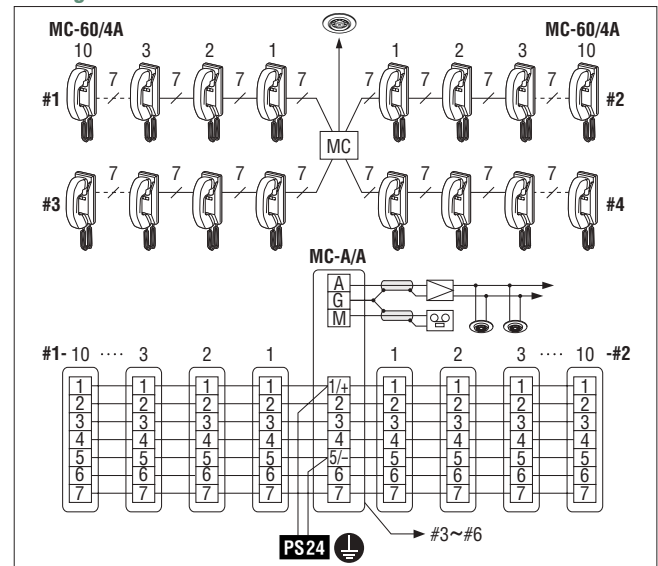
## Unit dimensions



## Specifications (MC-A/A)

|                     |  |
|---------------------|--|
| Power source        | 24V DC, PS-2420S, PS-2420UL, PS-2420   |
| Amp. input          | AUX 10K $\Omega$ , 0.3V~0.5V           |
| Music source output | Range 100mV~1.2V, 10K $\Omega$ or less |

## Wiring



Station blocks #1~6 of max. ten MC-60/4A's

**PS24** : PS-2420S, PS-2420UL, PS-2420

## Specifications (MC-60/4A)

|                 |   |
|-----------------|---|
| Power source    | 24V DC, 70mA max. (in page).  |
| Power supply    | PS-2420S, PS-2420UL, PS-2420 at MC-A/A.   |
| Communication   | Pick up and depress channel selector 1~4 and page w/PAGE button. Called party picks up and presses lit LED channel button.      |
| Talk channel    | 4 and a separate paging channel.  |
| Wiring          | 7 wires in loop, non-twisted.   |
| Cable specified | Line capacitance less than 25pF/30cm.   |
| Distance        | MC-A/A to MC-60/4A(*) 500m(0.65mm $\phi$ )<br>750m(0.8mm $\phi$ )<br>Total wiring distance 1500m(0.65mm $\phi$ , 0.8mm $\phi$ ) |

(\*) MC-A/A to farthest MC-60/4A, or between two farthest MC-60/4A's of different blocks.



## Mid-Power Intercom

MASTER

1

SUB

3

MP-S

## Master station



**MP-1S**  
1-call master



**MP-3S**  
3-call master

## Call button



**NP-B**  
Flush call plate

## Power supply

**PS-1225S**  
**PS-1225UL**  
**PS-1225**  
→ P.103

## Sub station



**AS-3N**  
Sub station



**AS-3A**  
Sub station

## Lineup



**NBZ-M\***  
Flush square  
frame



**N-EA\***  
Surface round  
frame

**NP-W\***  
Surface mount  
box  
for NP-B

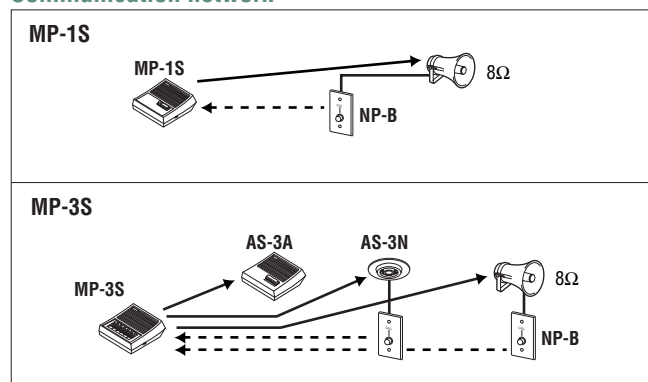
8Ω horn speaker  
locally available

\*Not available in Europe

## Features

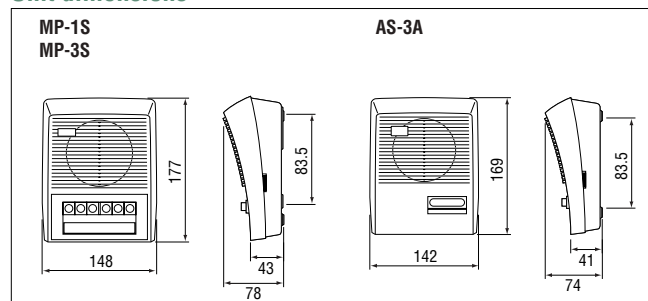
- 1 or 3-call mid-power intercom, 2.5W powered
- Incorporates subs either in console, ceiling mount or 8Ω horn for maximum output
- Hands-free reply from sub

## Communication network

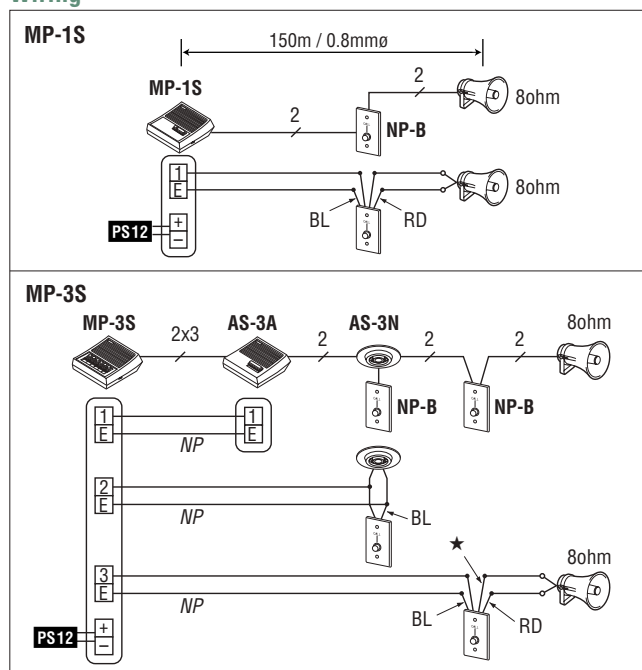


8Ω Horn w/talkback reply

## Unit dimensions



## Wiring



- For 8Ω horn without NP-B, install a 33MFD, 25V NP capacitor on No. line.
- BL : Blue(2) RD : Red(2) ★NP-25V Capacitor **PS12** : PS-1225S/UL

## Specifications (MP-S)

|                  |   |
|------------------|---|
| Power source     | 12V DC, 1A.   |
| Power supply     | PS-1225S, PS-1225UL, PS-1225  |
| Communication    | Sub calls in w/tone (& LED 20 sec. on MP-3S). Press sub selector and TALK to transmit, and release to listen. |
| Output           | 2.5W at 1KHz.   |
| Output impedance | 8Ω  |
| Wiring           | 2 parallel wires per sub, non-polarized.<br>*Do not make E wires common.                                      |
| Distance         | MP-S to sub 100m(0.65mmø) 150m(0.8mmø)  |



# High-Power Intercom

MASTER

SUB

2



10

AP-M

## Master station



**AP-5M**  
5-call master  
**AP-10M**  
10-call master  
(Photo)



**AP-1M**  
1-call master

## Sub station



**AS-3N**  
Sub station



**AS-3A**  
Sub station

## Call button



**NP-B**  
Flush call plate

## Lineup

**NP-W\***  
Surface mount  
box  
for NP-B



**NBZ-M\***  
Flush square  
frame  
for AS-3N



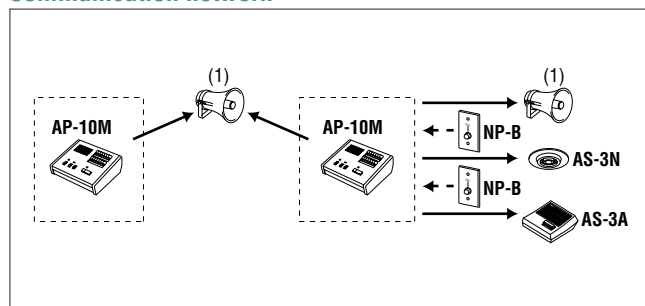
**N-EA\***  
Surface round  
frame  
for AS-3N

\*Not available in Europe

## Features

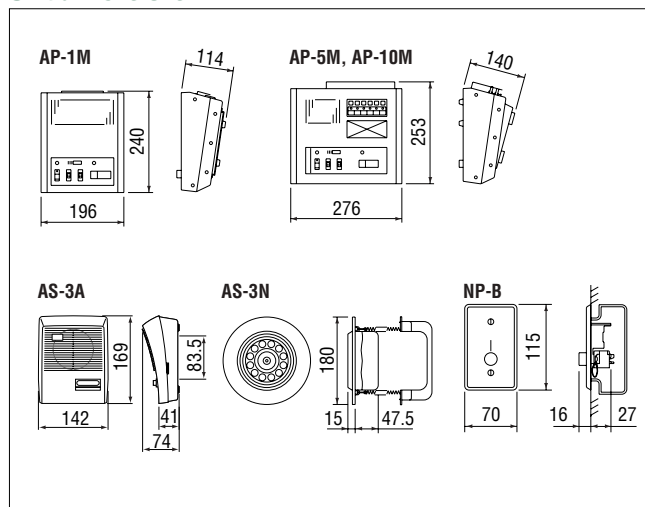
- 10 watt-powered paging & communication system
- Selective all call to 5 subs
- Single or dual-master configuration
- 8Ω or 16Ω horn speaker with talkback

## Communication network

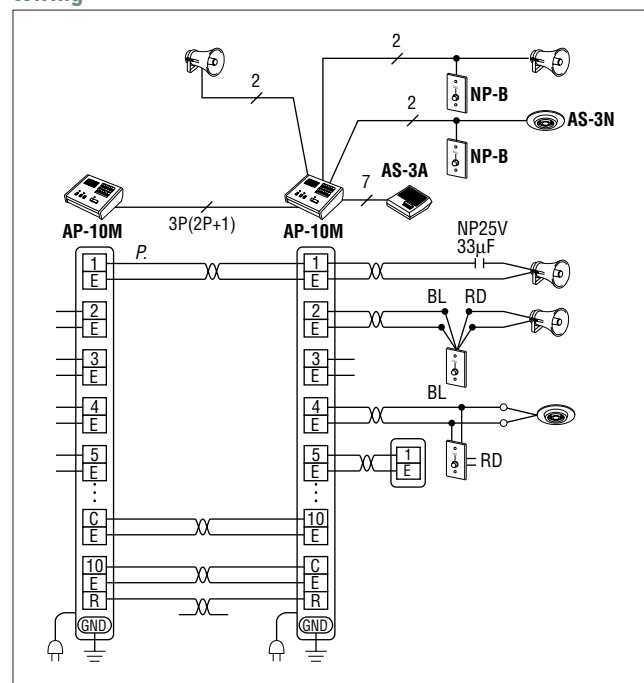


(1) 8Ω horn

## Unit dimensions



## Wiring



BL : Blue(2). RD : Red(2).

## Specifications (AP-M)

|               |   |
|---------------|---|
| Power source  | 110~125V, 127V, 230V, 220~240V AC, 50/60Hz.   |
| Consumption   | 45W. 6W standby.  |
| Communication | Sub calls in with tone & LED, 15 sec.<br>Depress selector and use Talk/Listen switch. All call selectively to max. 5 subs. Max. 10W transmit, adjustable.<br>300mW receive, adjustable. |
| Wiring        | 1 twisted pair per sub, non-polarized<br>3 pairs (5), masters.  |
| Distance      | AP-M to sub 150m(0.65mmø) 230m(0.8mmø)  |



# Nurse Call

MASTER

1

SUB

80

NHX

\*Not available in Europe, Australia, nor New Zealand

COMMERCIAL & INSTITUTIONAL APPLICATION SYSTEM

## Master station



**NHX-50M**  
50-call master station

## Add-on selector

### NHX-30G

30-call add-on selector  
Plugs into NHX-50M

### NHR-30K

30-call add-on trunk card

## Power supply

PS-2420S PS-2420UL PS-2420 → P.104

## Central control unit



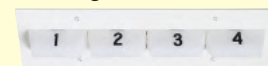
**NHX-80X**  
Central control unit

## Duty station



**NHR-SP**  
Duty station

## Zone light



**NHR-3A-4**  
4-zone call light

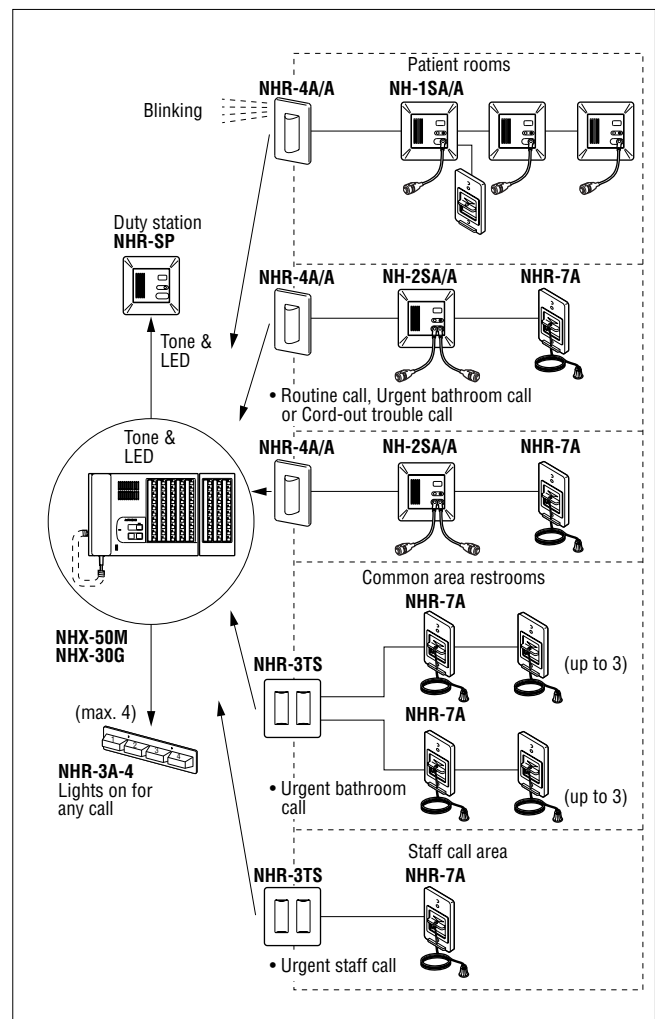
## Features

- One master, up to 80 sub stations. Single and dual patient stations
- Multi-station capability per patient room
- Three types of call-ins from patient stations: Routine call, Bathroom call & Cord-out trouble call, identified by tone & blinking LED (w/priority according to urgency and time of call)
- NHR-3TS Common Area Call station is used for common area bathroom call or staff call (urgent)
- Optional zone light (max. 4)

## Communication

1. At NHX-50M master, when called by a bedside sub, either lift handset or press TALK once to establish talk channel. To initiate a call, press the selector button of the sub. At the sub, pretone sounds and TALK is lit green. Corridor and zone lights do not turn on.  
To silence the tone, press TONE-OFF button. Tone will resume after 90 seconds or when new call is placed.
2. Corridor lamp & Zone 1~4 light turn on with any type of call placed by sub station area. When talk channel is established, two lights will turn off.
3. A call from NHR-3TS is of the same level as Urgent bathroom call. (no verbal communication)

## Communication network





## Sub station



**NH-1SA/A**  
Single-jack bedside sub station



**NH-2SA/A**  
Dual-jack bedside sub station



**NHR-8B**  
Bedside call switch



**NHR-DP**  
Dummy plug

## Corridor lamp



**NHR-3TS**  
Calling zone light



**NHR-4A/A**  
Corridor lamp w/red & white lamps



**NHR-7A**  
Staff call switch

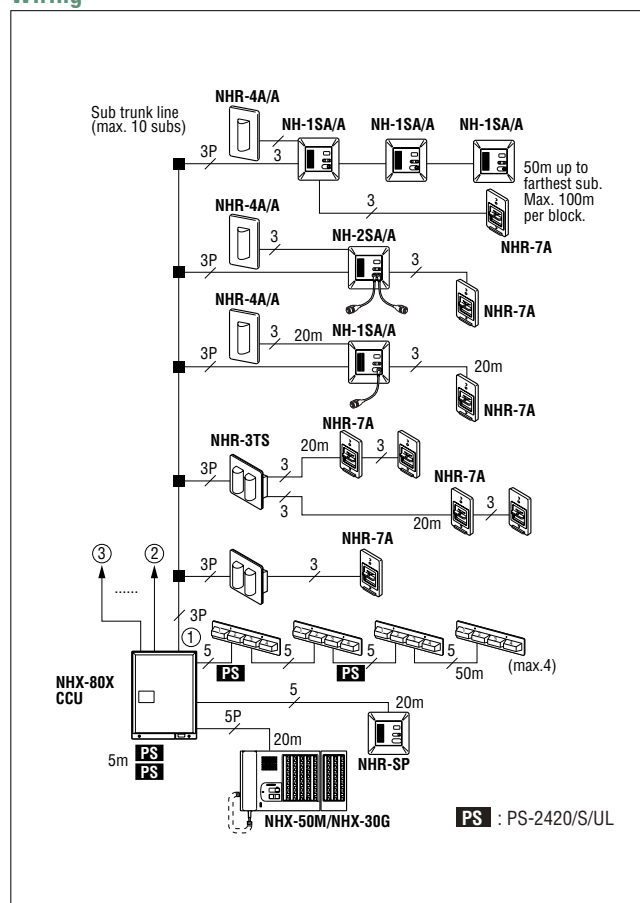


**NHR-7A**  
Bathroom pullcord

## Call tone & light annunciation

| TYPE OF CALL                           | tone                         | LIGHT                           |
|--|------------------------------|---------------------------------|
| <b>Routine call</b>                    |                              |                                 |
| At NHX-50M (& at Duty station)         | Single chime, every 6 sec.   | Blinking, every 2 sec.          |
| At Bedside sub                         | —                            | 'CALL' steadily lit             |
| At Corridor lamp                       | —                            | White lamp steadily lit         |
| <b>Urgent bathroom call or NHR-3TS</b> |                              |                                 |
| At NHX-50M (& at Duty station)         | Single chime, every 2 sec.   | Double blinking, every 1.8 sec. |
| At Bedside sub                         | —                            | 'CALL' steadily lit             |
| At Corridor lamp                       | —                            | Red lamp Blinking               |
| <b>Cord-out trouble call</b>           |                              |                                 |
| At NHX-50M (& at Duty station)         | Single chime, every 0.5 sec. | Blinking fast, every 0.4 sec.   |
| At Bedside sub                         | —                            | 'CALL' steadily lit             |
| At Corridor lamp                       | —                            | White lamp Blinking             |
| <b>NHR-3TS in common area</b>          |                              |                                 |
| Bathroom call (urgent)                 | —                            | Red blinking (2 lamps)          |
| Staff call (urgent)                    | —                            | White blinking (one lamp)       |
| <b>Line-off trouble at NHX-50M</b>     |                              |                                 |
| Line-off at bedside sub                | Slow buzzer, intermittent    | Lit 0.2 sec., every 2 sec.      |
| Line-off at Duty station               | Faster buzzer, intermittent  | No light                        |

## Wiring



Sub trunk line: 6 wires (3P). 4P with NHR-3A-4 light included.  
Each zone requires a separate common wire from NHX-80X.

Use twisted pairs with an overall shield, low capacitance, 0.65mm dia., solid conductors. (Rated capacitance level of wire: 25pF/30cm or less)



## Nurse Call

## NHX Components

\*Not available in Europe, Australia, nor New Zealand

## Central control unit



**NHX-80X**  
Central control unit

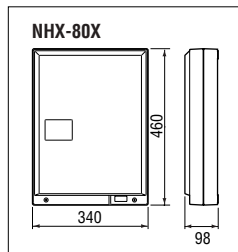


**NHR-30K**  
30-call add-on trunk card

## Features

Controls the NHX-50M and up to 80 sub stations. 1 ~ 8 trunk lines of up to 10 stations per trunk connected inside CCU. (3 pairs, or 4 pairs if zone light is installed). 5 pairs to Master station. Terminates in CCU Zone light (4 in loop), Duty station, and power supplies(2). After installation, the NHX-80X must be initialized. During use, turn power switch off and back on to reset. Install NHR-30K Expansion Trunk Card when NHX-30G is used.

## Unit dimensions



## Specifications (NHX-80X)

|                  |  |
|------------------|--|
| Power Source     | 24V DC, 4A max.  |
| Power supply     | 2 pcs PS-2420S, PS-2420UL, PS-2420   |
| Station capacity | 50 sub stations (max. 80 with NHX-30G & NHR-30K).  |
| Calling          | Routine call, Urgent bathroom call & Cord-out trouble call. Up to 5 calls can be displayed on NHX-50M.   |
| Communication    | Single and private talk channel. Press-to-talk or handset voice-actuation  |
| Call-in priority | (1) Cord-out trouble call, (2) Urgent bathroom call and NHR-3TS common area bathroom call or staff call, (3) Routine call. Subs' call-ins on standby connected according to urgency level and time of call.  |
| Warning tones    | (1) Line-off trouble at Bedside or NHR-3TS sub & Duty station. (To stop tone on the Duty station, plug in, 2-pin jumper to CN104 in CCU).(2) 90 sec. elapse timer: Call tone goes up to HIGH level.(3) 90 sec. off-hook timer: Steady tone will notify that handset is off-hook.   |
| Wiring           | 3 (or 4*) twisted pairs, CCU to Sub trunks 1~8. (*when zone light is installed)<br>5 twisted pairs, CCU to NHX-50M.<br>6 wires (parallel), CCU to NHR-SP.<br>5 wires (parallel), CCU to NHR-3A-4.<br><b>Use twisted pairs with an overall shield, low capacitance, 0.65mm dia., solid conductors. (Rated capacitance level of wire: 25pF/30cm or less)</b> |
| Wiring distance  | CCU to Sub (farthest) 50m(0.65mm)<br>Sub trunk line 100m(0.65mm)<br>CCU to NHX-50M 20m(0.65mm)<br>CCU to Duty station 20m(0.65mm)<br>CCU to Zone light 50m(1.0mm)<br>CCU to PS-2420UL 5m(1.0mm)  |
| Mounting         | 3-gang wall-mounting. Or inside Electrical Enclosure with secured door (Provide a suitable, non-combustible mounting surface).   |

## Master station



**NHX-50M**  
50-call master station

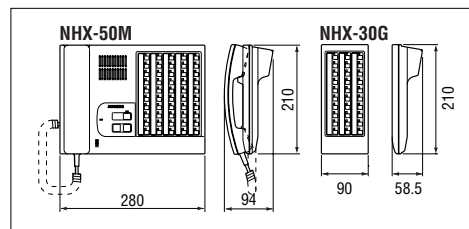


**NHR-30G**  
30-call add-on selector

## Features

Extremely compact 50-call desk console. Open voice communication with TALK button, or handset (voice-actuated). When called, simply press TALK or pick up handset to establish channel. Otherwise, press TONE-OFF button and go to calling location. To initiate a call, press a selector button first. NHX-30G is a 30-call add-on selector. Plugs into NHX-50M.

## Unit dimensions



## Specifications (NHX-80X)

|          |   |
|----------|---|
| Wiring   | 10-pin plug in connector (to NHX-80X). Provided with preset volume controls. Can verify connection of all sub stations. |
| Distance | Install within 20m from CCU.  |

## Duty station

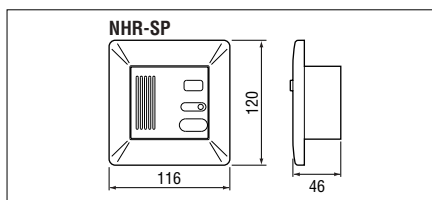


**NHR-SP**  
Duty station

## Features

Acknowledges any station call with tone and blinking LED. Go to the NHX-50M. Press TONE-OFF and identify the caller at Master station.

## Unit dimensions



## Specifications (NHX-80X)

|          |   |
|----------|---|
| Mounting | 2-gang semi-flush mounting.   |
| Wiring   | CN1 (6 pin) to NHX-80X. When NHR-SP is installed, unplug Connector from CN104 on NHX-80X. |



## Bedside sub station



**NH-1SA/A**  
Single-jack bedside  
sub station



**NH-2SA/A**  
Dual-jack bedside  
sub station



**NHR-3TS**  
Calling zone light



**NHR-8B**  
Bedside call switch



**NHR-DP**  
Dummy plug

### Features

Bedside station for calling and communication. Used with NHR-8B call cord. When call button is pushed, 'CALL' LED is lit red. When master replies, green 'TALK' LED is lit. Press CANCEL to reset the call. When NHX-50M calls in, pre-tone sounds and 'TALK' LED is lit green.

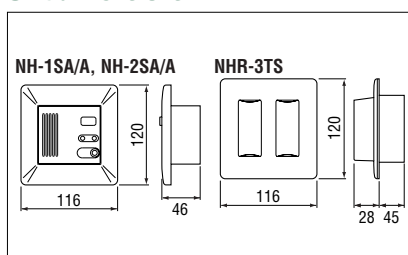
### Dummy plug (NHR-DP)

Plugs into jack unused on bedside sub stations.

### Specifications

|          |   |
|----------|---|
| Mounting | 2-gang semi-flush mounting  |
| Wiring   | Sub Nos. 1 ~ 10 setting on SW1.<br>CN1 (6 pin) to sub trunk line.<br>CN2 (8 pin) for NHR-7A, NHR-4A/A & zone light. |

### Unit dimensions



## Bathroom pullcord

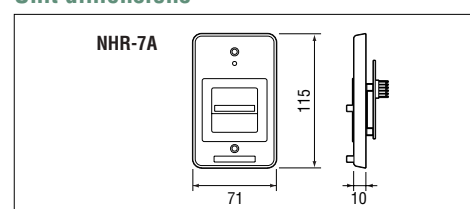


**NHR-7A**  
Staff call switch

### Features

Mechanically locked calling device, used to place an urgent bathroom call from a patient room, common area bathroom or staff call location. Cannot be used alone, and must be used with NH-1SA/A, NH-2SA/A, or with NHR-3TS common area call station. Provides dry closure contact. Master-CALL LED indicates call placed. Ratings 24V DC, 100mA (min. 5mA or more).

### Unit dimensions



### Specifications

|          |  |
|----------|--|
| Wiring   | Single-gang semi-flush mounting.       |
| Distance | 3 wires to patient station or NHR-3TS. |

## Corridor lamp

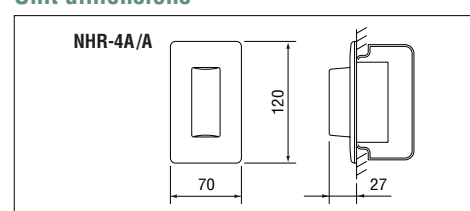


**NHR-4A/A**  
Corridor lamp w/red &  
white lamps

### Features

When a call is placed, the NHR-4A blinks red or is steadily lit white. Ratings: 24V DC (or more), 200mA max.

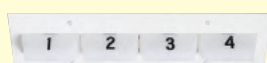
### Unit dimensions



### Specifications

|          |                                  |
|----------|----------------------------------|
| Wiring   | Single-gang semi-flush mounting. |
| Distance | 3 wires to Bedside sub station.  |

## Zone light

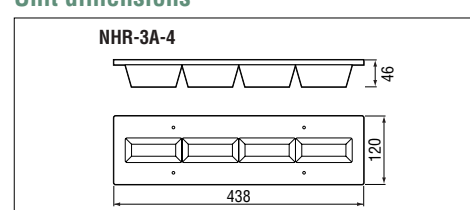


**NHR-3A-4**  
4-zone call light

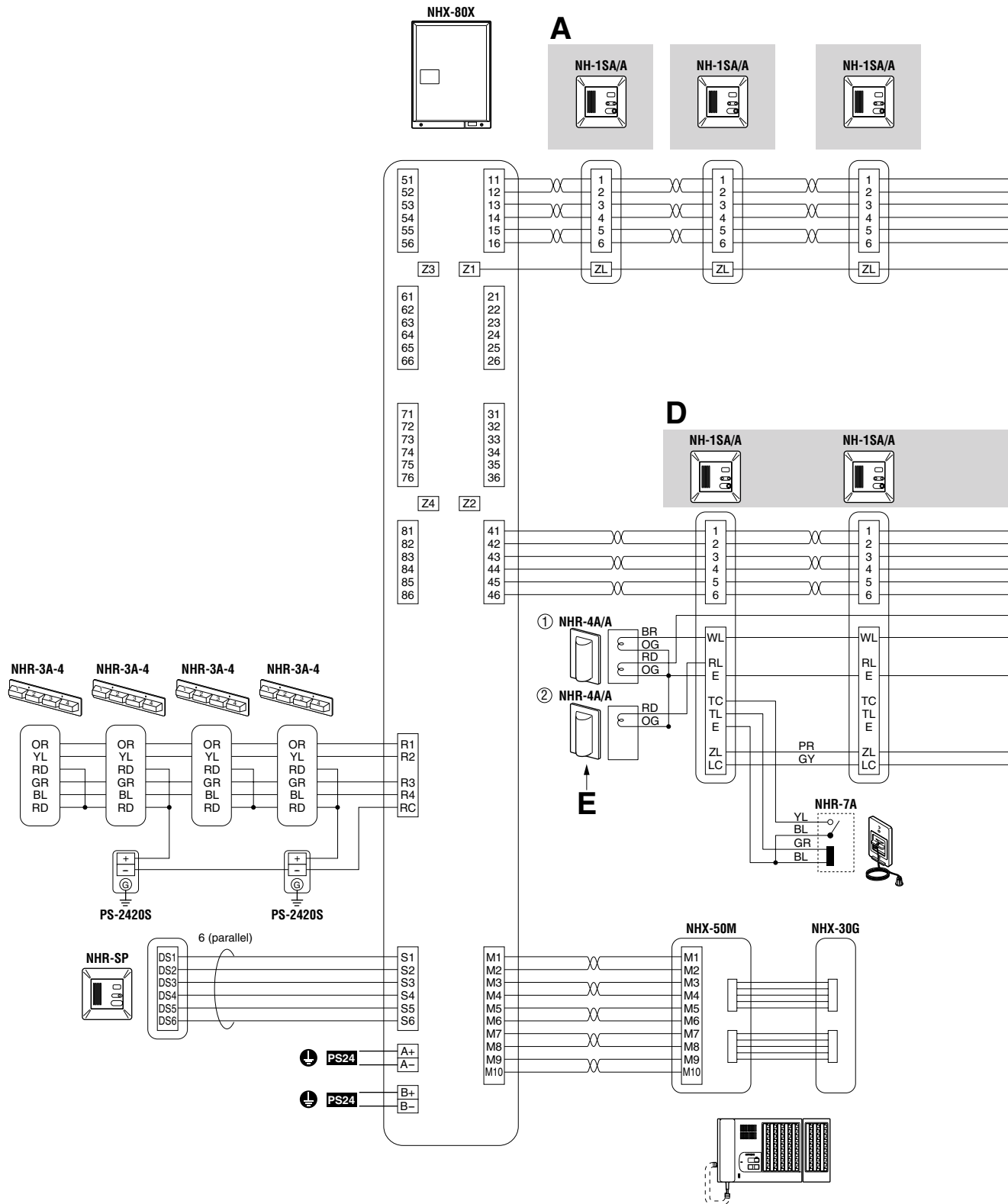
### Features

Zone lamp turns on when any call is placed on the system, indicating which zone has a call placed. Up to 4 zone lights can be installed in one system. Install one PS-2420S, UL for every 2 zone lights. Lamp ratings: 24V DC ~, 200mA.

### Unit dimensions







- A** Patient rooms w/a single bedside sub station
- B** Staff call (corridor)
- C** Bathroom call (common area)
- D** Patient rooms w/multiple bedside sub stations
- E** Corridor lamp NHR-4A/A

①: Two white lamps ②: One red lamp  
NHR-4A ② is required only when NHR-7A bathroom pullcord is installed in a single and common bathroom.

**PS24:** PS-2420S, PS-2420UL, PS-2420

#### Wire color identifications

**NHR-3A-4**  
OR: Orange (Zone 1)  
YL: Yellow (Zone 2)  
RD: Red (+)  
GR: Green (Zone 3)  
BL: Blue (Zone 4)  
RD: Red (+)

Zone light relay makes contact.

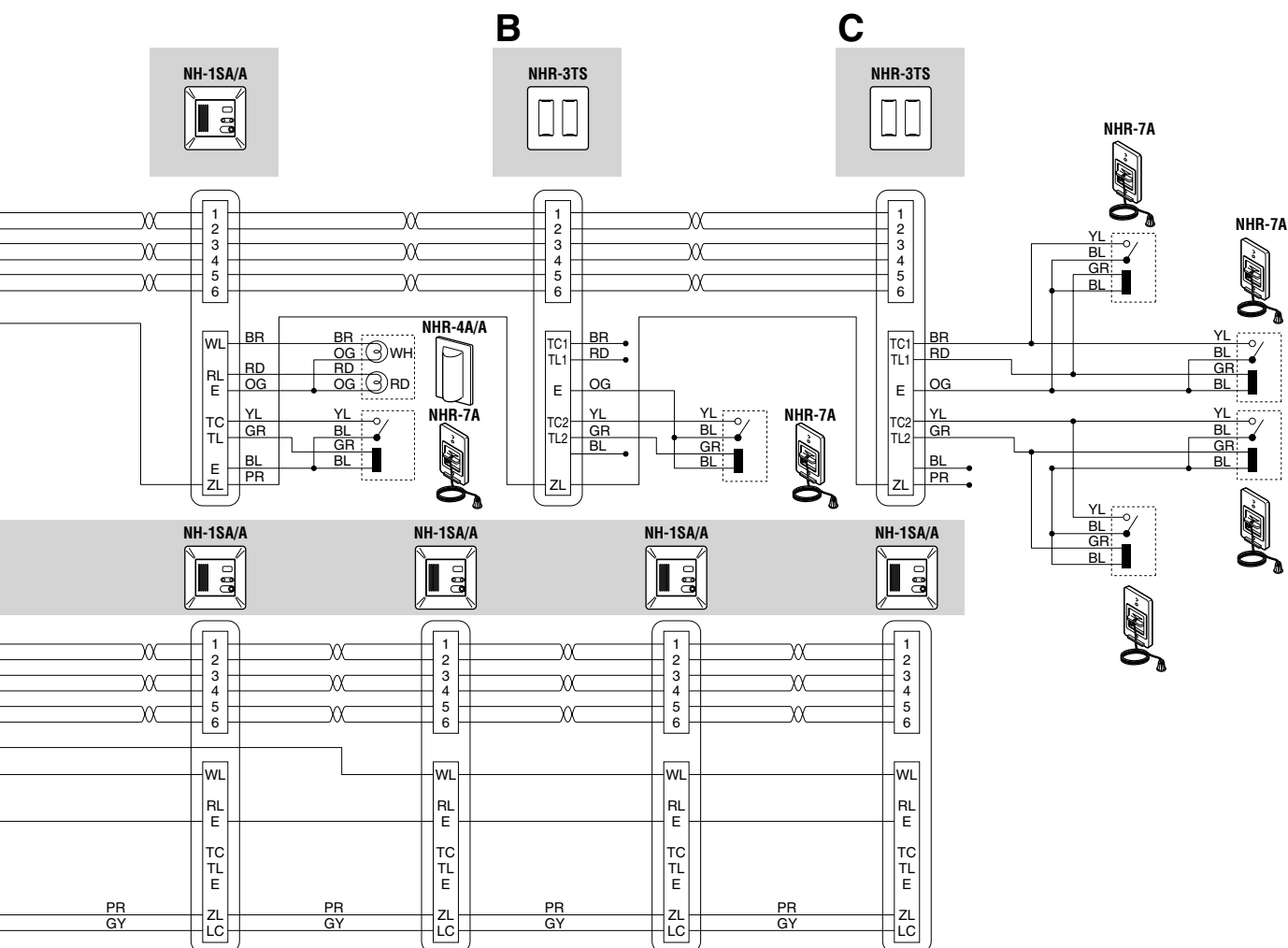
**NHR-4A/A**  
BR: Brown  
OG: Orange  
RD: Red  
OG: Orange

**NHR-7A**  
YL: Yellow  
BL: Blue  
GR: Green  
BL: Blue

**NH-1SA/A**  
BR: Brown  
RD: Red  
OG: Orange  
YL: Yellow  
GR: Green  
BL: Blue  
PR: Purple  
GY: Gray

**NHR-3TS**  
BR: Brown  
RD: Red  
OG: Orange  
YL: Yellow  
GR: Green  
BL: Blue  
PR: Purple





### Multi-station patient room applications

Multiple NH-1SA/A and NH-2SA/A bedside sub stations can be installed within a patient room, observing the following conditions;

1. Max. 6 bedside sub stations may be connected per room for max. 12 calls (when NH-2SA/A stations are used).
2. A corridor lamp inside (NHR-4A) must not be connected with more than 4 bedside sub stations.
3. Due to the above, install two NHR-4A/A corridor lamps when more than 4 sub stations are in one room, i.e. two WHITE lamps used in one NHR-4A/A, and one RED bulb used in the other NHR-4A/A.
4. NH-1SA/A and NH-2SA/A station numbers must be programmed in numerical order and connected to the same subs trunk line.
5. NHR-7A bathroom pullcord is optional.



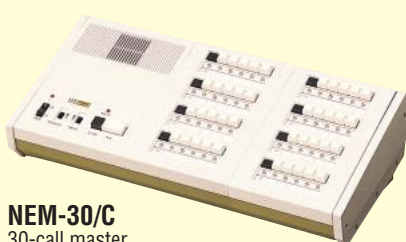
## Master station



**NEM-10/C**  
10-call master  
**NEM-20/C**  
20-call master



**NEM-10A/C**  
10-call master  
**NEM-20A/C**  
20-call master



**NEM-30/C**  
30-call master  
**NEM-40/C**  
40-call master



**NEM-30A/C**  
30-call master  
**NEM-40A/C**  
40-call master

## Sub station



**NA-A**  
Sub station



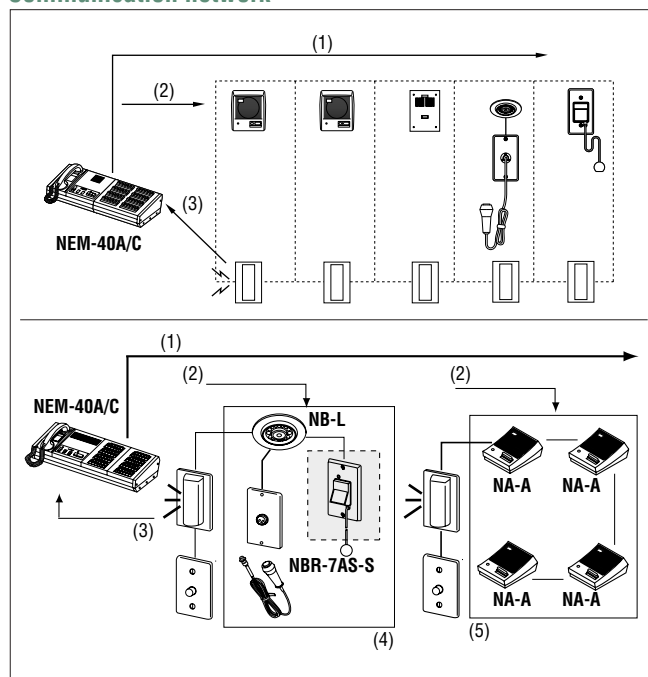
**NA-AN**  
Privacy sub station

**Power supply**  
**PS-2420S PS-2420UL**  
**PS-2420** → P.104

## Features

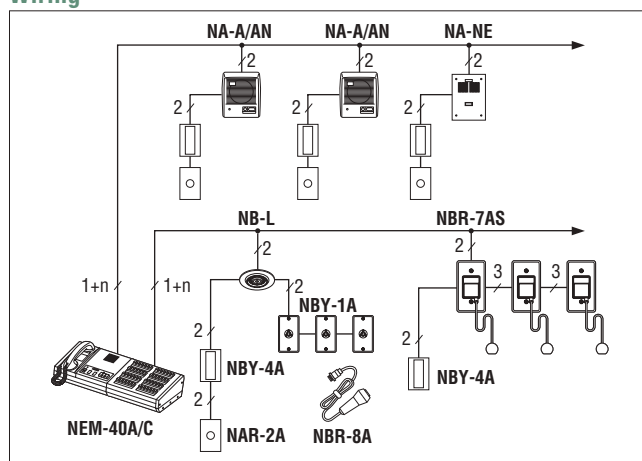
- Lamp memory intercom: Sub's call-in with tone & light
- Press-to-talk or handset with voice actuation
- Selective or group call of 10 subs
- All Call
- Pre-tone sounding at sub, when selected
- Optional accessories for health care applications
- Expand beyond 40 stations with 50-120-call master stations

## Communication network



- (1) All call for instant transmission to all subs
- (2) Selective call up to 10 subs or individually
- (3) Subs call-in w/tone & LED staying with corridor light on
- (4) NBR-7AS-S: Bathroom pullcord in a patient room
- (5) Multi-substation patient room

## Wiring



• 1 + n = 1 common + no. of Subs





**NB-L**  
Ceiling sub station



**NE-JA**  
Flush sub station



**NAR-6A**  
Call button



**NBY-4A**  
Corridor call light  
NR-4AS13(\*2) **SOP**



**NAR-3**  
Round corridor light

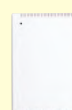
## Lineup



**IER-2**  
Call extension  
→ P.101



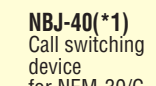
**NB-U**  
Music adaptor  
→ P.98



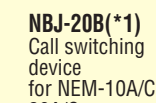
**NEW-5**  
Dual master call adaptor  
→ P.98



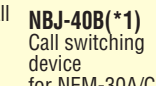
**NBJ-20(\*1)**  
Call switching device for NEM-10/C, 20/C  
→ P.98



**NBJ-40(\*1)**  
Call switching device for NEM-30/C, 40/C  
→ P.98



**NBJ-20B(\*1)**  
Call switching device for NEM-10A/C, 20A/C  
→ P.98



**NBJ-40B(\*1)**  
Call switching device for NEM-30A/C, 40A/C  
→ P.98



**NA-NE**  
Sub station



**NA-T/A(\*2)**  
Handset sub station



**NBY-1A**  
Metal jack for bedside call switch



**NBR-8A**  
Bedside call switch



**NBR-7AS**  
Bathroom pullcord, moisture-resistant

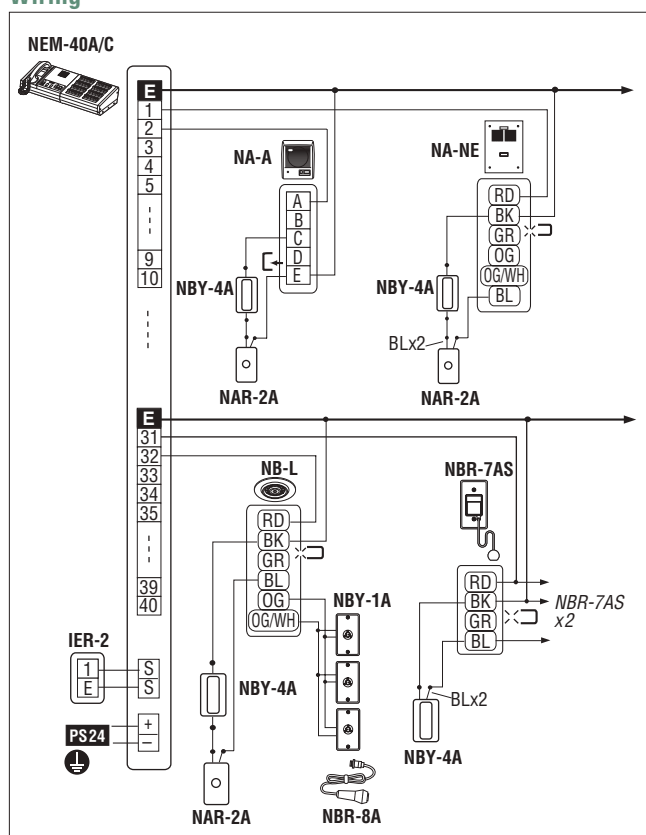


**NAR-2A**  
Call reset button  
**NBR-7AS-S(\*2) SOP**

(\*1) NBJ-20/40, NBJ-20B/40B: Not available in Europe

(\*2) NA-T/A, NBR-7AS-S, NR-4AS13: Not available in Europe, Australia, nor New Zealand

## Wiring



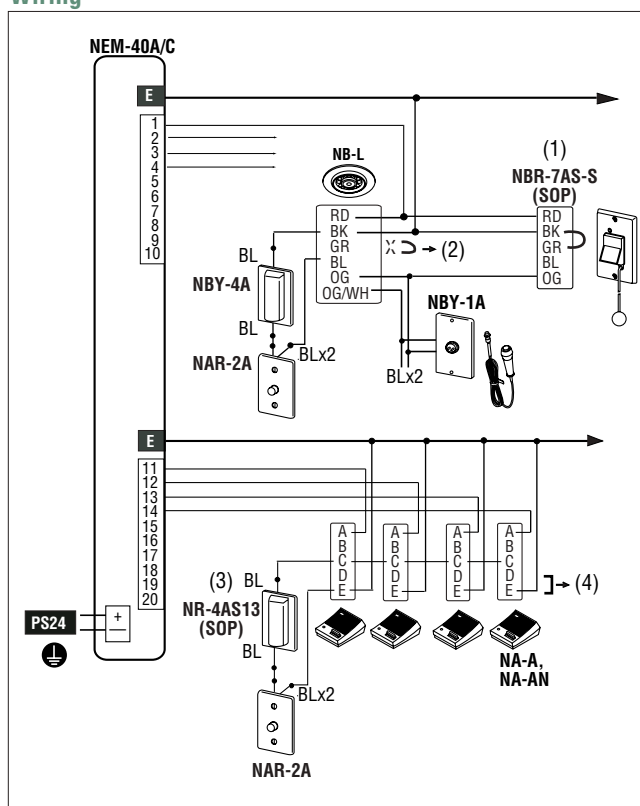
### Health care application

- Up to three NBR-7ASs can be connected in parallel.

RD : Red BK : Black GR : Green OG : Orange OG/WH : Orange/White BL : Blue

PS24 : PS-2420S, PS-2420UL, PS-2420

## Wiring



### Bathroom pullcord within a patient room

(1) NBR-7AS-S: Call-in from NBR-7AS-S can be cancelled only with NAR-2A Call reset button.

Press on upper end of Call button on NBR-7AS-S to release the call.

(2) Cut GREEN wire.

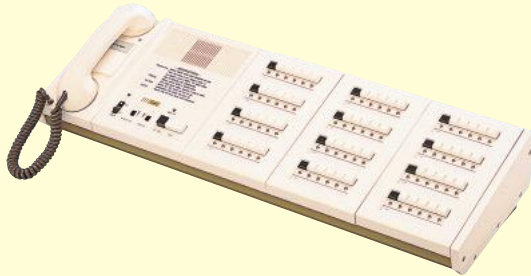
### Multi-substation patient room

(3) NR-4AS13: NBY-4A corridor call light may hold up to three NA sub stations. Use NR-4AS13 for more than three NA sub application.

(4) Remove the D - E link on each NA sub station.

PS24 : PS-2420S, PS-2420UL, PS-2420





**NEM-60A**  
60-call master

## Lineup



**IER-2**  
Call extension  
→ P.101

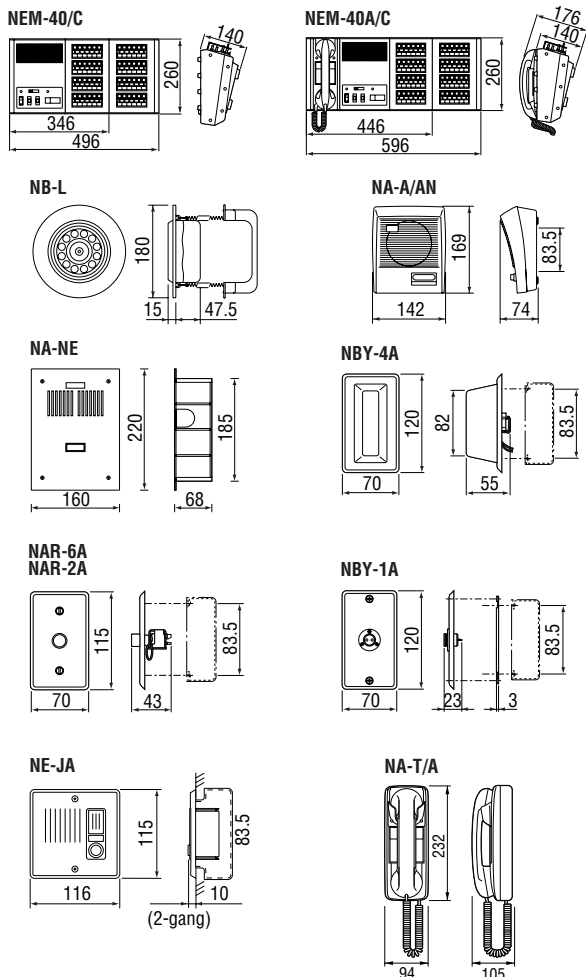


**NB-U**  
Music adaptor  
→ P.98

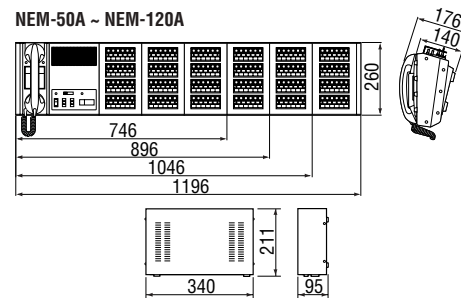
**NEM-50**  
50-call master  
**NEM-60**  
60-call master  
**NEM-70**  
70-call master  
**NEM-80**  
80-call master  
**NEM-90**  
90-call master  
**NEM-100**  
100-call master  
**NEM-110**  
110-call master  
**NEM-120**  
120-call master

**NEM-50A**  
50-call master  
**NEM-60A**  
60-call master  
**NEM-70A**  
70-call master  
**NEM-80A**  
80-call master  
**NEM-90A**  
90-call master  
**NEM-100A**  
100-call master  
**NEM-110A**  
110-call master  
**NEM-120A**  
120-call master

## Unit dimensions



## Unit dimensions



\*NEM-n/7.A width : Reduce 100mm (handset part) for each sized station.

## Specifications (NEM)

|               |  |
|---------------|--|
| Power source  | 24V DC, 45W max. 2.5W standby (40-call)<br>24V DC, 180W max. 7.5W standby (120-call)   |
| Power supply  | PS-2420S, PS-2420UL, PS-2420 (40-call)   |
| Communication | Open voice press-to-talk or handset voice actuated.<br>Sub calls in w/tone & LED latching at master. Press TALK button to transmit, release to listen, or lift handset. At sub, pretone and voice when selected. Talk hands-free.<br>Press ALL CALL button to activate all sub stations. |
| Output        | 500mW max., adjustable.<br>All Call: 6W, 12W. 24W (120-call)<br>Selectively up to 10 subs w/TALK: 3W   |
| Wiring        | 2 wires per sub, non-twisted (1 common + no. Subs)   |
| Distance      | NEM to NA subs 130m(0.65mmø) 200m(0.8mmø)  |



## Call switching device



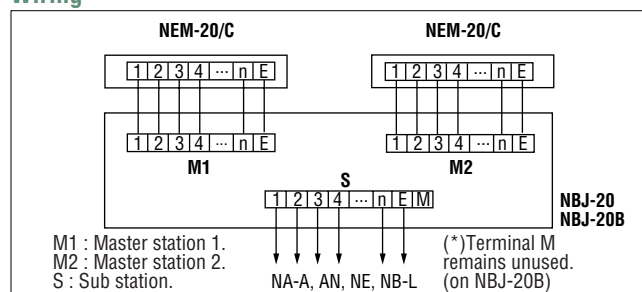
**NBJ-20\***  
Call switching device  
**NBJ-40\***  
Call switching device  
**NBJ-20B\***  
Call switching device  
**NBJ-40B\***  
Call switching device

\*Not available in Europe

### Features

- Switches all NA sub wiring from one master to the other to route all call-ins to the master on duty.
- NBJ-20 & NBJ-20B are equipped with a rotary switch, and NBJ-40 & NBJ-40B with two rotary switches.
- When the rotary switch is put to 1 position, all the sub wiring is connected with Master station(M1). To switch the sub wiring to Master station(M2), put the rotary switch to 2 position.

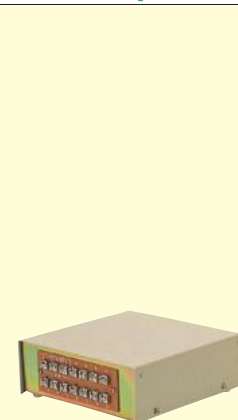
### Wiring



### Used for

NBJ-20 for NEM-10/C & NEM-20/C  
NBJ-40 for NEM-30/C & NEM-40/C  
NBJ-20B for NEM-10A/C & NEM-20A/C  
NBJ-40B for NEM-30A/C & NEM-40A/C

## Music adaptor



**NB-U**  
Music adaptor

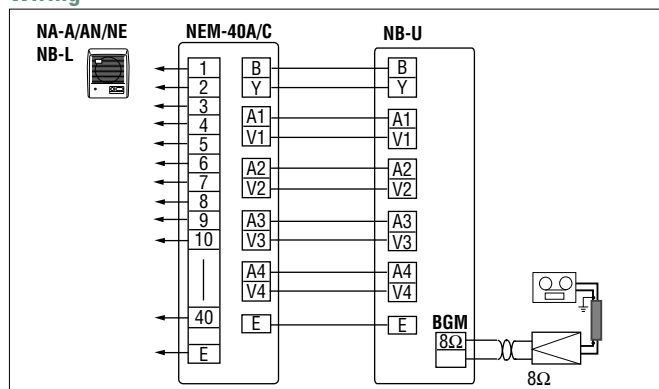
### Features

- Distributes music to all subs with auto mute while communicating.
- When NEM includes NEW-5 adaptor(s), NB-U cannot be used.

### Used for

NEM-n/C, NEM-na/C  
(n = 10 ~ 40)

### Wiring

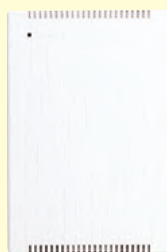


- As shown, connect NB-U to 8 Ohm output of Amplifier with twisted pair wires.
- Remove jumpers between A1~V1, A2~V2, A3~V3, A4~V4 on master station.
- Amplifier requirements: Input: 100mV for rated output. 10W w/8Ω output or 10W w/4~16Ω output.
- Do not use 1KΩ output on the amplifier.

### Specifications

|                 |  |
|-----------------|--|
| Power source    | 6V DC, supplied by NEM.  |
| Permitted input | 5W. 10W at its peak.   |
| Wiring          | 3 wires commom + 2 per 10-call (max.11).                                       |
| Distance        | NB-U to NEM 10m(0.65mmø) 15m(0.8mmø)<br>NB-U to Amp. 75m(0.65mmø) 115m(0.8mmø) |

## Dual-master call adaptor



**NEW-5**  
Dual master call adaptor

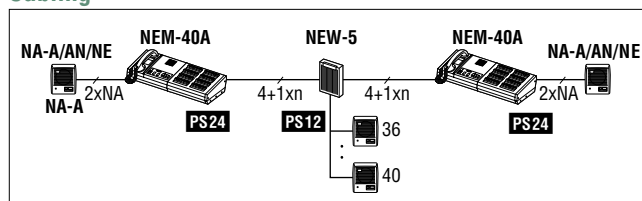
### Features

- Common NA subs place a call ringing two NEM masters.
- One NEW-5 req'd for every five subs calling both masters. Eight NEW-5 for 40 sub stations, can be powered with one PS-1225S.

### Used for

NEM-n/C, NEM-na/C  
(n=10~40)

### Cabling



### Specifications (NEW-5)

|               |  |
|---------------|--|
| Power source  | 12V DC   |
| Power supply  | PS-1225S, PS-1225UL, PS-1225   |
| Capacity      | 5 subs per NEW-5.<br>Max. 8 adaptors for NEM-40(A)/C.                              |
| Communication | Separate channel for ea. master.   |
| Wiring        | 2 wires, NEW-5 to sub.   |
| Distance      | NEW-5 to sub 130m(0.65mmø) 200m(0.8mmø)<br>NEW-5 to NEM 100m(0.65mmø) 150m(0.8mmø) |



## Access control

### Surface mount



#### AC-10S

Vandal resistant access control keypad, surface mount



#### JK-DV, AC-10S

→ P.2

### Flush mount



#### AC-10F

Vandal resistant access control keypad, flush mount

### Power source

12-24V DC power supply  
12-24V AC transformer

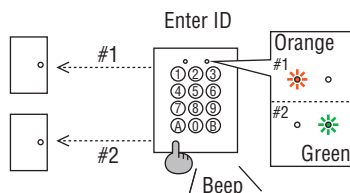
### Features

- Two types of keypads are available.  
AC-10S: Surface mount type AC-10F: Flush mount type
- AC-10S matches JK-DV and JF-DV, color video door stations.
- Vandal resistant panel, zinc die cast, and tamper proof screws are included.
- Two independent relay outputs (N/O or N/C) are available. When same access code is programmed for both #1 and #2, two relays activate simultaneously.
- Programmable up to 100 access codes\* 4, 5, or 6 digits in length.  
\* #1: up to 60, #2: up to 40
- Keypad lockout: After too many incorrect access codes are attempted.
- Anti-tailgate: As soon as the door is closed after access is granted on #1, the door is locked even before programmed output time. Prevent sneak in.
- One push door release with external timer connection: While the external timer is on operation, access code is not required. Press "0" key only. Programmable #1 and/or #2.
- External output for alarming: When "Lockout" or "Forced entry" occurs, external output is available at #2.
- Two LED indicators show the status of the access control system.
- Illuminated keypad is easy to read.
- Audible key press

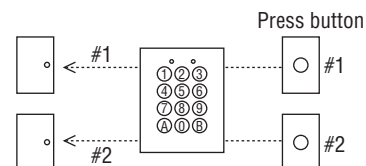
### Features

- Activate door release (relay)

By keypad

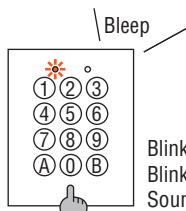


By request to exit/entry button



- Keypad lockout

The keypad is locked out after too many incorrect access codes are attempted.



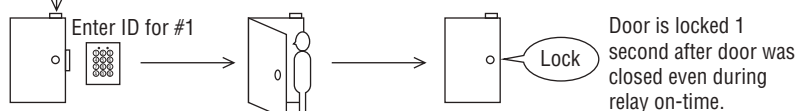
Programmable

- Incorrect access code: 10-99 times
- Lockout time: 10-99 seconds

Blink keypad 4 times  
Blink LED (orange) programmed period  
Sound buzzer approx. 3 seconds

- Anti-tailgate

Door sense switch

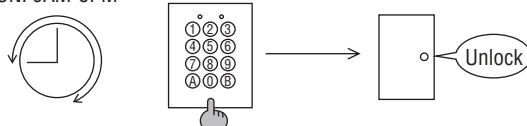


- One push door release with external timer connection

During the timer is on operation

ON: 9AM-5PM

Press "0" key

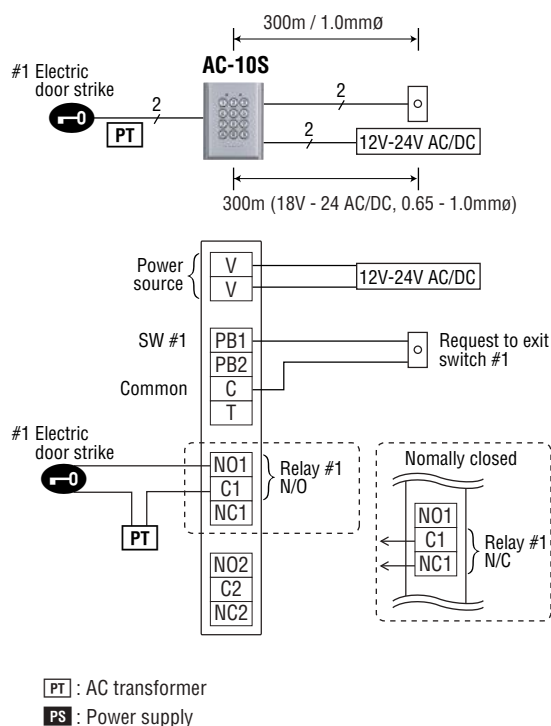


\* The design and specifications are subject to change without notice for improvement.

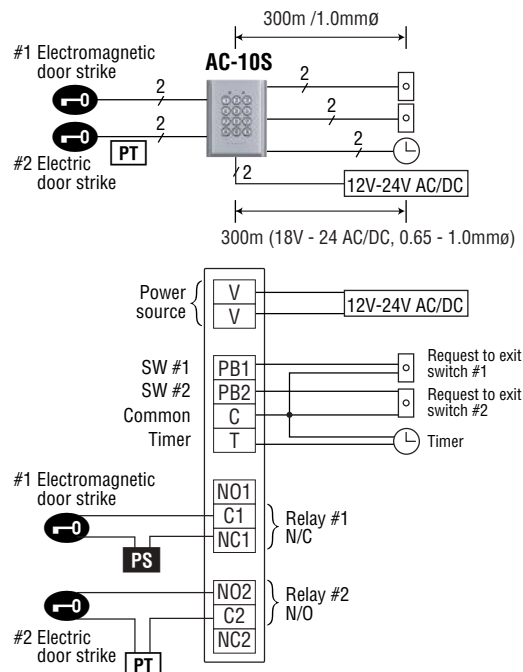


## Wiring

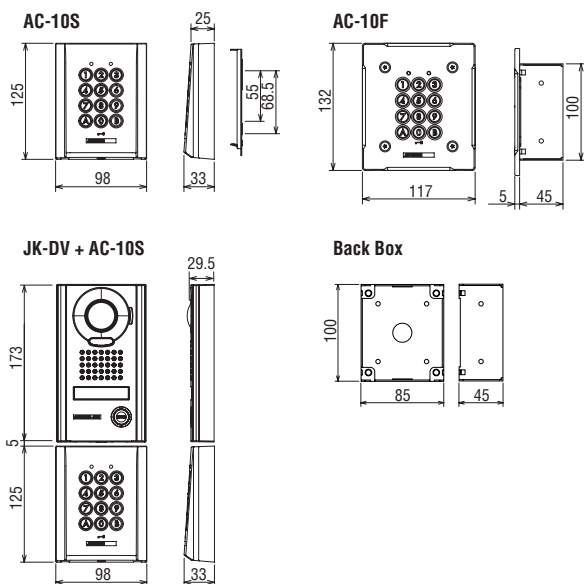
(1) Relay #1 (Normally open)



(2) Relay #1 (Normally closed) & Relay #2 (Normally open)



## Unit dimensions



### Specifications (AC-10S, AC-10F)

|                 |  |
|-----------------|--|
| Power source    | 12 – 24V AC or 12 – 24V DC   |
| Consumption     | Max. 100mA   |
| Relay           | Output: 2<br>Contact rating: 24V AC/DC,<br>3A (resistive load), 1A (inductive load)<br>Dry contact: Normally open or Normally closed<br>Operating time: From 1 second to 99 seconds              |
| Access code     | Number: Up to 100 (#1: 60, #2: 40)<br>Code length: From 4, 5, or 6, (0 ~9, A, B)   |
| Wiring          | Two conductors   |
| Wiring distance | Access control ~ Power source:<br>100m (12V – less than 18V AC/DC, 0.65 – 1.0 mmØ)<br>300m (18V – 24V AC/DC, 0.65 – 1.0 mmØ)<br>Access control ~ Request to exit button<br>300m (0.65 – 1.0 mmØ) |
| Environment     | Weather resistant (IP54 equivalent)  |



# Accessories

## Call extension



**IER-2**  
Call extension

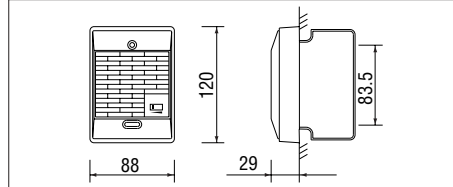
### Features

- Announces (chime) call tone only, adjustable
- Indoor mounting

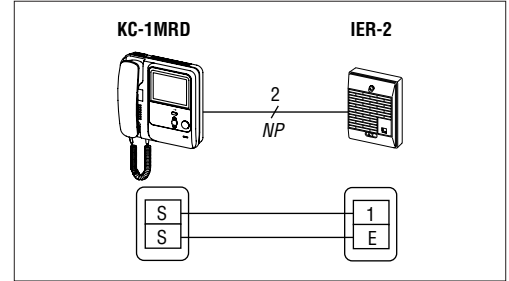
### Used for

IE series,  
KC-1MRD, KC-1GRD, KB-3MRD  
NEM-n, NEM-nA, TC-M  
JA-2MECD, JA-2MCD, JF-1MD, JF-2MED,  
JK-1MD, JK-1MED, DB-1MD

### Unit dimensions



### Wiring



## Door release



**EL-12S**  
Electric door strike



**RY-PA**  
Door release relay

### Features

- Door release activation, momentary or talk line-controlled

### Used for

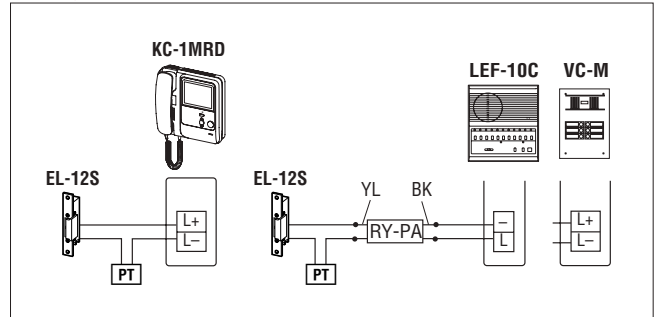
#### Single-family unit

DA-1DS, C-123L/A  
IE-1AD(U), IE-1GD(U)  
IE-2AD(U), IE-8MD(2)  
TD-H/B (via DE-UR)  
LEM-1DL  
LEF, LEF-C (via RY-PA)  
JA-2MECD, JA-2MCD  
JF-1MD, JF-2MED  
JK-1MD, JK-1MED  
KC-1MRD, KC-1GRD  
KB-3MRD

#### Multi-family unit

DA-2DS/G, DA-4DS/G  
GF (5)  
VC-M (via RY-PA)

### Wiring



BK : Black(2) YL : Yellow(2)

### Specifications (EL-12S)

Power source & Consumption 12V AC, 125mA  
12V DC, 200mA

### Specifications (RY-PA)

Power source 12V DC  
Relay contact rating 110V AC, 1A  
24V DC, 1A

## Relay



**RY-AC/A**  
External signaling relay

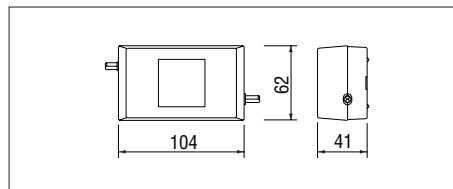
### Features

Intercom station can be signaled by external device via RY-AC/A relay. External device will be activated momentarily as long as the call signal on the intercom is activated.

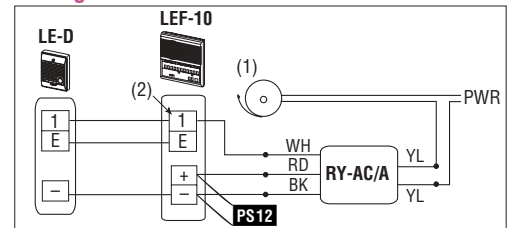
### Used for

TD-H/B, TD-Z/A  
IE-Series  
IE-8MD, LEF

### Unit dimensions



### Wiring



(1) External signaling device, bell, etc. (2) Call receive terminal WH : White RD : Red(+) BK : Black(-) YL : Yellow PWR : Power source

### Specifications (RY-AC/A)

Power source 12V DC, supplied by power supply of system or trunk line.  
Contact rating 0.3A, 240V AC 1.0A, 24V DC  
Bell, buzzer, etc. must be AC operated or DC mechanical type only.



## Relay



**TAR-3**  
External signaling relay

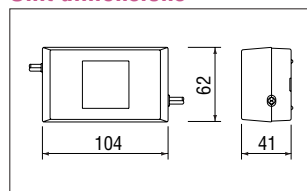
### Features

Allows integration of a doorbell, etc. to intercom. The device will be activated as long as handset is ringing. When the intercom is picked up, the device will no longer be activated.

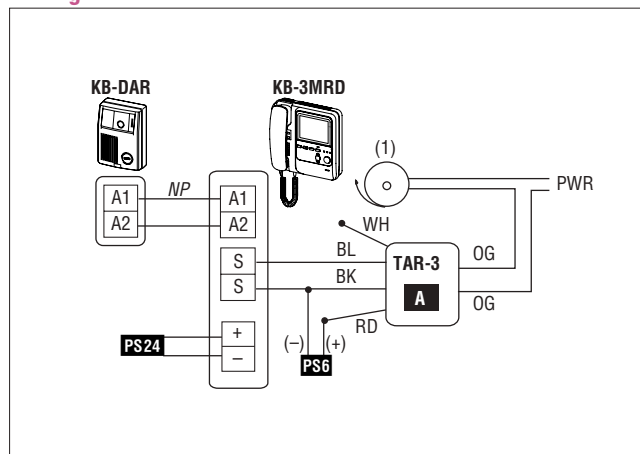
### Used for

IE chime tone  
IE-8MD  
KC, KB series  
AT-406  
TB-SE(TC-M)  
DB-1MD

### Unit dimensions



### Wiring



(1) Bell, etc. PWR : Power source  
WH : White BL : Blue BK : Black(-) RD : Red(+) OG : Orange  
PS6 : PS-0602D, PS-0602C

### Specifications (TAR-3)

|  |                                       |
|--|---------------------------------------|
| Power source   | 6V DC, supplied by PS-0602D, PS-0602C |
| Contact rating   | 0.3A, 240V AC<br>1.0A, 24V DC         |
| Doorbell or buzzer must be AC operated or DC mechanical type only. |                                       |

## Auxiliary light power control



**MAW-B**  
Auxiliary light control relay

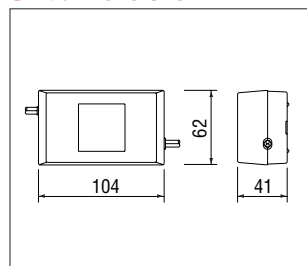
### Features

MAW-B relay is used for turning on an auxiliary light to spotlight a caller at the entrance. The light is illuminated when the residential call button is pressed, and during visual monitoring mode.

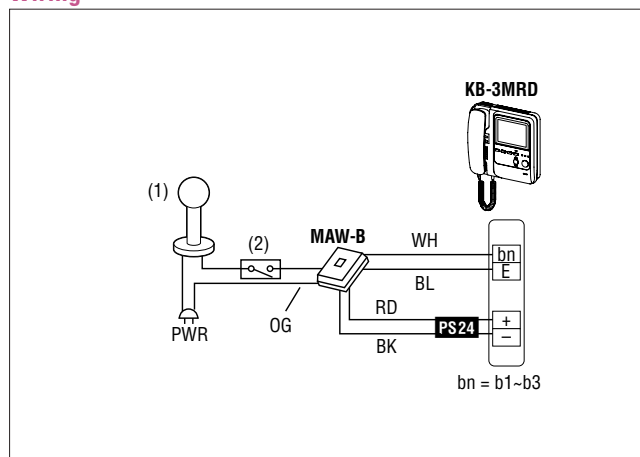
### Used for

KB-3MRD, GF-BC(GF)

### Unit dimensions



### Wiring



(1) Porch light, etc. (2) Local switch  
WH : White BL : Blue RD : Red(+) BK : Black(-) OG : Orange(2)  
bn = b1~b3

### Specifications (MAW-B)

|                      |  |
|----------------------|--|
| Power source         | 24V DC   |
| Power supply         | PS-2420S, PS-2420UL, PS-2420 of system.  |
| Power consumption    | 2.5W max. 0.5W standby   |
| Relay contact rating | Dry closure contact for incandescent light for general lighting of less than 100W. |



# Power Supplies

## 15V AC

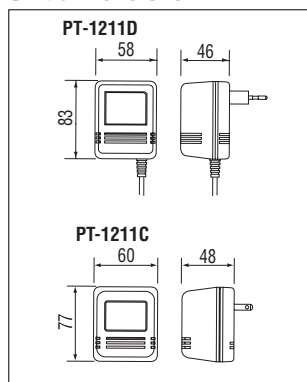


**PT-1211D**



**PT-1211C**

### Unit dimensions



**Used for**  
DA-1MD, DB-1MD

### Specifications (PT-1211D)

|                                |                  |
|--------------------------------|------------------|
| Input voltage & Capacity       | 230V AC, 50/60Hz |
| Output voltage                 | 15V AC           |
| *Manufactured by Sino-American |                  |

### Specifications (PT-1211C)

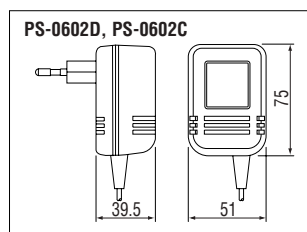
|                                |                  |
|--------------------------------|------------------|
| Input voltage & Capacity       | 120V AC, 50/60Hz |
| Output voltage                 | 15V AC           |
| *Manufactured by Sino-American |                  |

## 6V DC



**PS-0602D  
PS-0602C**

### Unit dimensions



**Used for**  
C-123L/A, AT-406, LEM,  
TAR-3

### Specifications (PS-0602C)

|                          |                  |
|--------------------------|------------------|
| Input voltage & Capacity | 120V AC, 50/60Hz |
| Output voltage           | 6V DC, 0.2A      |

### Specifications (PS-0602D)

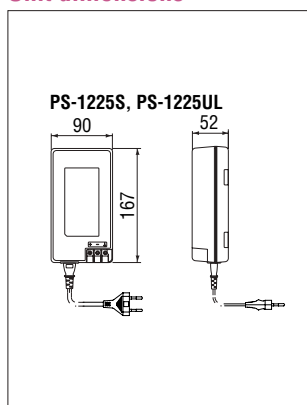
|                                |                   |
|--------------------------------|-------------------|
| Input voltage & Capacity       | 230V AC, 50/60Hz. |
| Output voltage                 | 6V DC, 0.2A       |
| *Manufactured by Sino-American |                   |

## 12V DC



**PS-1225S  
PS-1225UL  
PS-1225**  
(without AC cord)

### Unit dimensions



**Used for**  
IE-1AD(U), IE-1GD(U), IE-2AD(U),  
IE-2A2DU, IE-8MD, LEM-1DL,  
LEF, LEF-C, TD-H/B,  
TD-Z/A, VC-M, MP-S,  
NEW-5 (NEM), TB-AD10 (TC-M)

### Specifications (PS-1225S, PS-1225UL, PS-1225)

|                          |                                  |
|--------------------------|----------------------------------|
| Input voltage & Capacity | 100-240V AC, 50/60Hz 37W/65-82VA |
| Output voltage           | 12V DC, 2.5A                     |

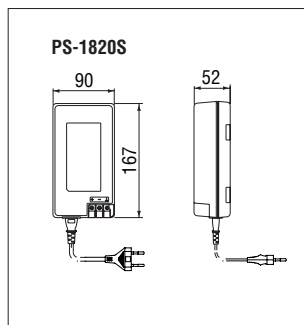


## 18V DC



**PS-1820S**  
**PS-1820UL**  
**PS-1820**  
 (without AC cord)

### Unit dimensions



### Used for

IE-8MD, JBW-BA, JF-1MD, JF-2MED, JK-1MD, JK-1MED  
 TC-M, KC-32EU, RY-3DL

### Specifications (PS-1820S, PS-1820UL, PS-1820)

|                          |                                    |
|--------------------------|------------------------------------|
| Input voltage & Capacity | 100V-240V AC, 50/60Hz, 45W/75-95VA |
| Output voltage           | 18V DC, 2A                         |

## 24V DC

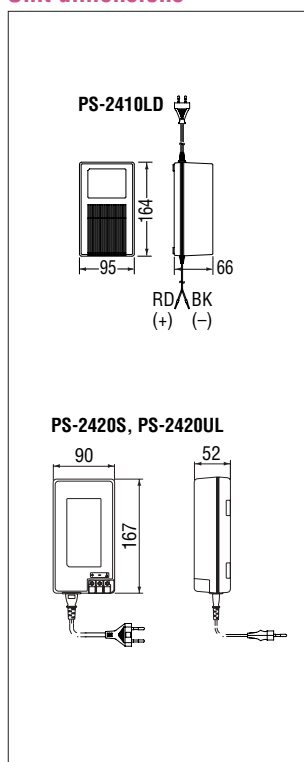


**PS-2410LD**  
**PS-2410LC**



**PS-2420S**  
**PS-2420UL**  
**PS-2420**  
 (without AC cord)

### Unit dimensions



RD : Red (+). BK : Black (-).

### Used for

JA-2MECD, JA-2MCD, GF-BC, GF-VBC/A, GFW-VBC, MAW-B  
 YAZ-90-3W, NEM-(A)/C, KC-1MRD, KC-1GRD, KB-3MRD  
 KC-32EU, RY-3DL, MU-100

### Specifications (PS-2410LD)

|                          |                          |
|--------------------------|--------------------------|
| Input voltage & Capacity | 220-240V AC, 50/60Hz 35W |
| Output voltage           | 24V DC, 1A               |

### Specifications (PS-2410LC)

|                          |                      |
|--------------------------|----------------------|
| Input voltage & Capacity | 120V AC, 50/60Hz 35W |
| Output voltage           | 24V DC, 1A           |

### Specifications (PS-2420S, PS-2420UL, PS-2420)

|                          |                                    |
|--------------------------|------------------------------------|
| Input voltage & Capacity | 100-240V AC, 50/60Hz 60W/100-125VA |
| Output voltage           | 24V DC, 2A                         |



# Communication Distance

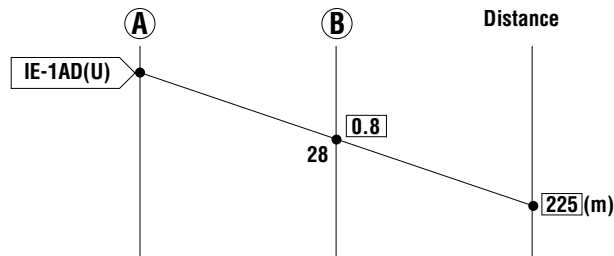
The below graph is to assist you in determining the diameter of wires or communication distance required.

**Example;**

To obtain the communication distance for IE-1AD(U) system using 0.8 mm dia. wires;

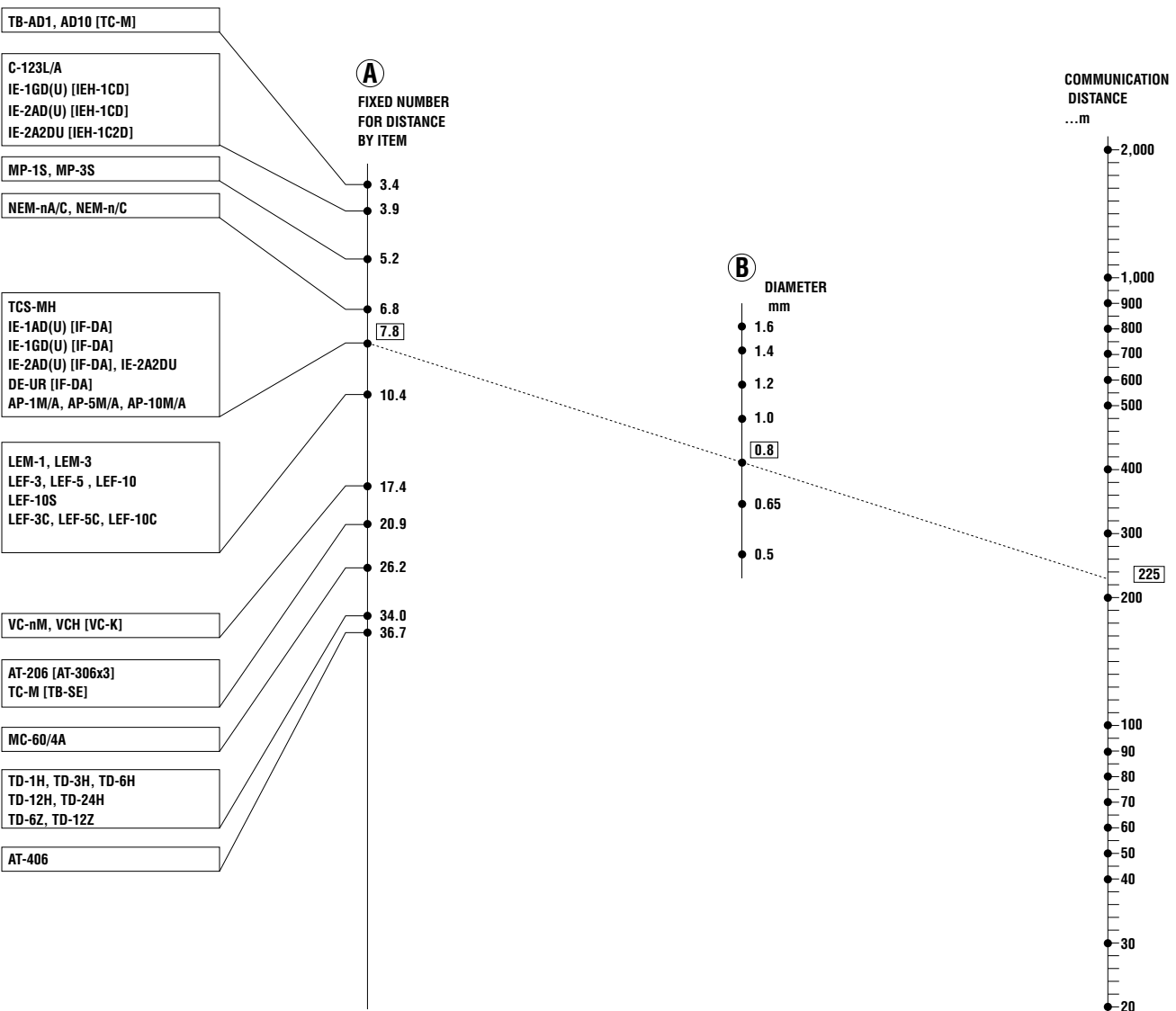
**1. On the graph;**

Draw a line from IE-1AD(U) on point A 7.8, crossing the line B at the point 0.8 to reach a point reading 225.



## COMMUNICATION DISTANCE CALCULATION GRAPH

### SYSTEM & MODELS



**NOTES;**

IE-1AD(U) [IF-DA] shows distance between IE-1AD(U) and IF-DA or other IE door station.

★Video Intercoms are not included in the graph.



# Compatibility of video intercom system

**Hands-free color video intercom** ✓: Compatible Blank: Not Compatible

| Door station<br>Sub station<br><br>Master station |          | Existing model     |                          |                          |  |                    |      |       |                    |                   |        |                   |        |                   |             |                   |                       |        | Discontinued model       |                    |
|---|----------|--------------------|--------------------------|--------------------------|--|--------------------|------|-------|--------------------|-------------------|--------|-------------------|--------|-------------------|-------------|-------------------|-----------------------|--------|--------------------------|--------------------|
|   |          | Video door station |                          |                          |  | Audio door station |      |       | Sub master station |                   |        |                   |        |                   | Sub station |                   | Long distance adaptor |        | Video door station       | Sub master station |
|   |          | JA-DAC<br>JA-DGC   | JF-DA<br>JF-DV<br>JF-DVF | JK-DA<br>JK-DV<br>JK-DVF | AX-DV<br>AX-DV-P<br>AX-DVF<br>AX-DVF-P | JA-D               | JF-D | AX-DM | JA-2HCD            | JA-2SD<br>(audio) | JF-2HD | JF-2SD<br>(audio) | JK-1HD | JK-1SD<br>(audio) | JF-1FD      | JF-1SD<br>(audio) | JBW-BA                | JKW-BA | JB-DA<br>JB-DV<br>JB-DVF | JB-2HD             |
| Existing model                                    | JA-2MECD | ✓                  |                          |                          |  | ✓                  |      |       | ✓                  | ✓                 |        |                   |        |                   |             |                   | ✓                     |        |                          |                    |
|   | JA-2MCD  | ✓                  |                          |                          |  | ✓                  |      |       | ✓                  | ✓                 |        |                   |        |                   |             |                   | ✓                     |        |                          |                    |
|   | JF-1MD   |                    | ✓                        |                          |  |                    |      |       |                    |                   |        |                   |        | ✓                 | ✓           | ✓                 |                       |        |                          |                    |
|   | JF-2MED  |                    | ✓                        |                          |  |                    | ✓    |       |                    | ✓                 | ✓      |                   |        |                   |             | ✓                 |                       |        |                          |                    |
|   | JK-1MD   |                    |                          | ✓                        |  |                    |      |       |                    |                   |        | ✓                 | ✓      |                   |             |                   | ✓                     |        |                          |                    |
|   | JK-1MED  |                    |                          | ✓                        |  |                    |      |       |                    |                   |        | ✓                 | ✓      |                   |             |                   | ✓                     |        |                          |                    |
|   | AX-8MV   |                    |                          |                          | ✓                                      |                    |      | ✓     |                    |                   |        |                   |        |                   |             |                   |                       |        |                          |                    |
| Discon.<br>model                                  | JB-2MED  |                    | ✓                        |                          |  | ✓                  |      |       | ✓                  |                   |        |                   |        |                   |             | ✓                 |                       | ✓      | ✓                        |                    |
|   | JB-2MD   |                    | ✓                        |                          |  | ✓                  |      |       | ✓                  |                   |        |                   |        |                   |             | ✓                 |                       | ✓      | ✓                        |                    |

AX-8MV requires a central exchange unit.

**Color video intercom** ✓: Compatible Blank: Not Compatible

| Door station<br>Sub station<br>Adaptor<br><br>Master station |         | Existing model     |        |                    |                   |         |                   |                       |                | Discontinued model |        |                     |
|--|---------|--------------------|--------|--------------------|-------------------|---------|-------------------|-----------------------|----------------|--------------------|--------|---------------------|
|  |         | Video door station |        | Sub master station |                   |         |                   | Long distance adaptor | Picture memory | Video door station |        | Sub station         |
|  |         | KB-DAR             | KC-DAR | KB-3HRD            | KB-3SD<br>(audio) | KC-1HRD | KC-1SD<br>(audio) | JBW-BA                | KC-32EU        | KA-DA              | KA-DAR | MK-1SD/B<br>(audio) |
| Existing model   | KB-3MRD | ✓                  |        | ✓                  | ✓                 |         |                   |                       | ✓              |                    |        |                     |
|  | KC-1MRD |                    | ✓      |                    |                   |         |                   | ✓                     | ✓              |                    |        |                     |
|  | KC-1GRD |                    | ✓      |                    |                   | ✓       | ✓                 | ✓                     | ✓              |                    |        |                     |
| Discon. model  | KA-1MD  |                    |        |                    |                   |         |                   |                       |                | ✓                  |        | ✓                   |
|  | KA-1MRD |                    |        |                    |                   |         |                   |                       |                |                    | ✓      | ✓                   |



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\*1 Not available in Europe

\*2 Not available in Europe, Australia,  
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