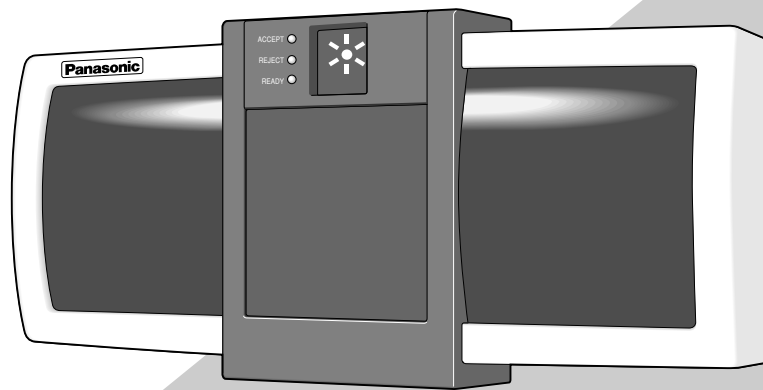


# Panasonic

## Iris Camera Operating Instructions

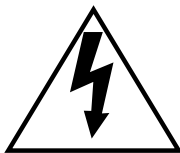
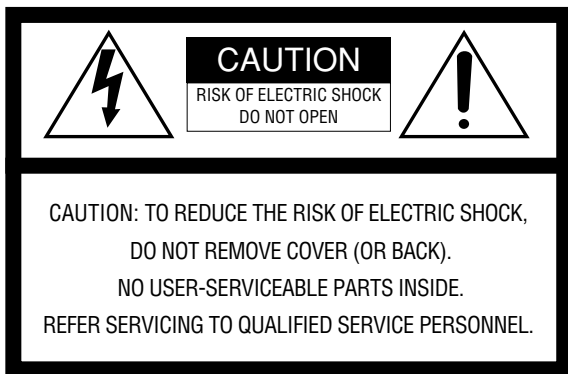
Model No. **BM-ET500**



Before attempting to connect or operate this product,  
please read these instructions carefully and save this manual for future use.

**Cautions:**

- This unit is for indoor use only.
- Before attempting to connect or operate this product, please read the label on the bottom.



SA 1965

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



SA 1966

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

For U.S.A

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**FCC Caution:** To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The serial number of this product may be found on the bottom of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. BM-ET500

Serial No. \_\_\_\_\_

**WARNING:** To prevent fire or electric shock hazard, do not expose this appliance to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

# IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not use near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the points where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 13) All interconnecting devices must be UL Listed.
- 14) To operate this equipment safely and securely, you have to maintain it regularly. Maintenance interval is about 1 year but it may be shorter because of the environmental condition where this equipment is located.

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# PREFACE

Iris Camera BM-ET500 is used in an access control system. The iris camera, which captures a user's iris image with the control by Control Unit BM-ED500, is available for following uses.  
(Control Unit BM-ED500 is sold separately, however, it must be used in combination with the iris camera.)

- **As an enrollment camera for iris image capturing and Administration PC enrollment**

To activate iris recognition, it is necessary to capture the iris images of a user and enroll the iris data in the administration PC. A control unit (for enrollment) generates iris data from iris images captured by an iris camera (for enrollment), and transfers the data to the administration PC in the LAN (Local Area Network). The iris data is enrolled in the iris database of the administration PC. Up to 2 000 users can enroll their iris data. \*1

\*1 To administer the iris data captured by an iris camera and generated by a control unit, you need to install the optional Administration Software BM-ES500E onto a PC. Refer to the manuals of BM-ES500E for details.

- **As a recognition camera for iris recognition**

The user can have his/her iris image captured only by looking at the iris camera (for recognition). It will take approx. 3 seconds between capturing and recognition.\*2 The user can check the recognition result with the status indicator (ACCEPT/REJECT) on the front side of the iris camera.

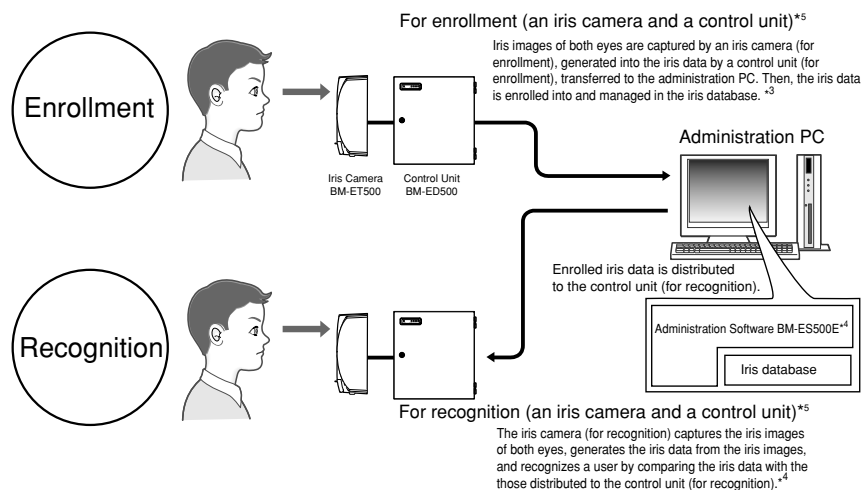
Iris data of up to 1 000 users can be distributed from the administration PC to recognition cameras.

\*2 The recognition time may differ depending on capturing conditions.

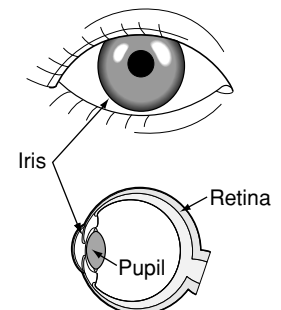
\*3 The iris camera (for enrollment) captures the iris images of both eyes at the same time, but the iris data of each eye is enrolled separately.

\*4 Capturing diagnosis is made by the administration software at the time of enrollment.

\*5 Up to 127 gate systems (an iris camera and control unit) can be connected to the administration PC in the LAN. The control unit can also be used as both for enrollment and recognition by changing the operation mode.



- Iris recognition technology is a way to identify a person with iris patterns (an iris is the thin plate-shaped film in front of the eyeball), which differ among each person. The iris pattern of the left eye differs from that of the right eye.
- Using iris cameras, users can carry out recognition without touching any devices.
- The iris data of users need to be enrolled in the administration PC. In the iris recognition process, the users are recognized with the enrolled iris data.



# FEATURES

- **Automatic guidance and recognition by two cameras**

When a user approaches within 66 cm {2.16 ft.} of the front of an iris camera, iris image capturing and checking will automatically start. A wide angle camera, which monitors the user's face and surroundings, and a telecamera, which captures the user's iris images, can eliminate the adjustment of the camera angle and eye positioning by users. The recognition range of the iris camera is between approx. 30 cm {0.98 ft.} and 60 cm {1.97 ft.}

- **One-time capturing of both eyes enables recognition in approx. 3 seconds\***

This iris camera captures the iris images of both eyes at the same time. A control unit generates iris data from the captured iris images, and compares the data with that distributed to the control unit. If either of the iris data is corresponding with the iris data distributed, you will be recognized as an enrolled user. The recognition time will be approx. 3 seconds (approx. 2 seconds for capturing and 1 second for recognition)\*<sup>1</sup>.

\*<sup>1</sup> The recognition time may differ depending on capturing conditions.

- **Built-in color CCTV camera that captures the user's facial image**

The iris camera has a built-in minisize color camera. You can record the facial image of a user by connecting this camera and a recorder. Using the alarm outputs of the control unit, you can record only users that have not been recognized.

- **Numeric keys to enter the ID-and-password**

Users can carry out ID-and-password authorization, which is an alternate means of recognition when iris recognition is unavailable, with the numeric keys of the iris camera.

- **Access control system can be composed.**

Iris cameras, control units, and the administration PC can compose an access control system in combination with access control panels\*<sup>2</sup> and electric locks\*<sup>2</sup>, etc.

\*<sup>2</sup> These devices are independent to BM-ET500.

## NOTIFICATION ABOUT THIS DOCUMENT

- This document describes basic operating instructions of Iris Camera BM-ET500.
- The operating instructions supplied to BM-ED500 Control Unit describes operating instructions, examples of system composition, and installation guide of the control unit. The instruction manuals supplied to Administration Software BM-ES500E, which is the software required for iris data enrollment, describe how to use the administration software. Normally, users of recognition cameras do not have to read them. These operating instructions and manuals are intended for system installers and administrators.
- System installers and administrators should read the following operating instructions and manuals as well as this document.

**To use Control Unit BM-ED500:** BM-ED500 Operating Instructions

**To use Administration Software BM-ES500E:** BM-ES500E Installation Guide

BM-ES500E Administrator's Guide

BM-ES500E Backup Guide

- BM-ES500E Installation Guide, Administrator's Guide, and Backup Guide are PDF documents contained on the CD-ROM that is supplied with Administration Software BM-ES500E. To read the PDF documents, you need to install Adobe Acrobat® Reader, which you can obtain at the homepage of Adobe Systems Incorporated.

## TRADEMARKS

- Adobe Acrobat is either a registered trademark or trademark of Adobe Systems Incorporated in the United States and/or other countries.
- Other company names and product names appearing in these operating instructions are registered trademarks or trademarks of the company concerned.

## LIMITATION OF LIABILITY

This Product is used to recognize an individual person by using Iris data, and is not designed to protect against "theft" or "crime" independently.

IN NO EVENT SHALL MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

- (1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (2) PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- (3) UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- (4) INCONVENIENCE OR ANY LOSS ARISING OUT OF NON-RECOGNITION WHEN IRIS DATA IS ALREADY ENROLLED, DUE TO ANY REASON OR CAUSE OTHER THAN ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;  
(It might be a case that the entrance-gate control system, for example, combining the Product and the electric lock devices, does not open/close the door properly because of before-mentioned reasons or other causes of such system except for the Product.)
- (6) ANY LOSS OR DAMAGE, OR CLAIMS ARISING OUT FROM LOSS OR LEAK OF PC DATA INCLUDING IRIS DATA IN THE ADMINISTRATION PC  
(Iris data is nature of privacy. The customer shall be responsible for any Iris data stored in the administration PC.)

# DOCUMENT CONVENTION

These operating instructions use the following convention when describing the use and operation of the camera.

**Access control system:** System which controls access using iris cameras, control units, and the administration PC, in combination with access control panels, card readers, and electric locks, etc.

**Administration Software:** Panasonic Administration Software BM-ES500E

This software is used for administering iris enrollment/recognition.

(This product is sold separately, however, it must be used in combination with an iris camera.)

**Administration PC:** PC in which the administration software is installed

The PC can administer control units in the LAN.

**Control Unit:** Panasonic Control Unit BM-ED500, which is used for iris enrollment/recognition, and controls electric locks

(This product is sold separately, however, it must be used in combination with iris cameras.)

**Distribution:** To transfer enrolled data from the administration PC to control units and to save the data in the control units

**Enrollment:** To save a user's iris data associated with the individual information (name and ID data, etc.) in the administration PC

Iris data is enrolled using the administration software.

**Iris camera (The unit):** Panasonic Iris Camera BM-ET500

**Iris data:** Data that are generated from captured iris images

**Iris recognition:** Way to identify a person with iris patterns, which differ between each person

**Recognition:** To identify a user by comparing the iris data that is generated (from iris images captured) with the data enrolled in the iris database

**Wiegand:** Transmission method used as an access control system interface

**Warning(s):** Warning statements identify conditions or practices that could result in severe injury or loss of life.

**Caution(s):** Caution statements identify conditions or practices that could result in damage to this product or light injury.

**Note(s):** Note statements identify special instruction, rule, or side comment related to the topic.



# PRECAUTIONS

- **Refer all work related to the installation of this product to qualified service personnel or system installers.**

Consult an expert on the load bearing capacity of the installation surface and structure. If the surface is not strong enough, the camera may fall down. Refer to the product specifications for weights.

- **Do not drop metallic parts through slots.**

This could permanently damage the appliance. Turn the power off immediately and contact qualified service personnel for service.

- **Do not attempt to disassemble the appliance.**

To prevent electric shock, do not remove screws or covers.

There are no user-serviceable parts inside. Contact qualified service personnel for maintenance.

- **Handle the appliance with care.**

Do not strike or shake, as this may damage the appliance.

- **Do not expose the appliance to water or moisture. Do not try to operate it in wet areas.**

Take immediate action if the appliance gets wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the appliance and also cause electric shocks.

- **Do not use strong or abrasive detergents when cleaning the appliance body.**

Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.

- **Do not operate the appliance beyond its specified temperature, humidity, or power source ratings.**

Use the appliance at temperatures between 0 °C and 40 °C {between 32 °F and 104 °F} and humidity between 30 % and 80 %. The input power source for this appliance is 32 V DC (when supplied from the control unit) or 24 V DC (when supplied from an external power supply device).

- **This unit has no power switch.**

Power is supplied from Control Unit BM-ED500 or from an external 24 V DC power supply device. Refer to the control unit's operating instructions for how to turn on/off the power.

- **When you use an external power supply device, do the following:**

Turn on the external power supply device before turning on Control Unit BM-ED500.

Turn off the external power supply device after turning off the control unit.

- **The third-party external power supply must be a UL Listed access control power limited device.**

- **Consumable part**

Contact your dealer for the front panel replacement, for example, when it is damaged or when you cannot recognize or enroll yourself.

Part number of the front panel: 3CF001017AAA

- **Use of near-infrared ray**

Near-infrared ray is used when iris data is enrolled or recognized by the unit. The near-infrared ray is compliant with the radiological safety standard of IEC60825-1.

- **Indication**

Refer to the bottom of the unit as to the indications of equipment classification and power source, etc.

- **This product is not designed to prevent theft in advance. We shall not guarantee you for any trouble caused by using this unit.**

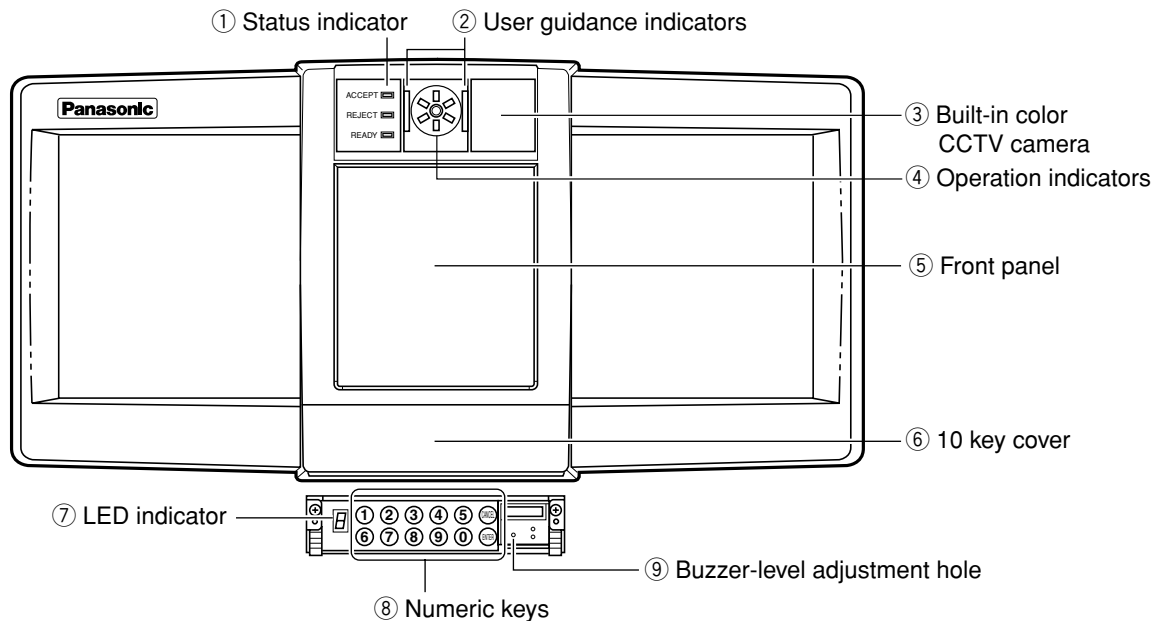
- **If you are in a situation that iris recognition is impossible from the exterior, recognition or enrollment will be invalid.**

- **Iris data is privacy. Take enough care not to leak the image data out of the administration PC. It is also recommended that you should get an agreement from a person to register his or her data.**

- **We recommend that you note down your settings and save them. Power or battery failure may erase the setting.**

- **Do the self-diagnostic test, when you open this unit door for maintenance, etc. The self-diagnostic test can be carried out by turning on a power supply.**  
Read BM-ED500 Operating instructions for turning on a power supply.

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



## ① Status Indicator

Shows the status of recognition or enrollment.

**ACCEPT:** Lights up when recognition has been successfully executed. \*

Or lights up when enrollment has been successfully executed through iris image capturing.

**REJECT:** Lights up when recognition has not been successfully executed.

Or lights up when enrollment has not been successfully executed through iris image capturing.

**READY:** Lights up when recognition/enrollment is available.

When this indicator is blinking, recognition/enrollment is unavailable.

\* Depending on capturing condition, you might not enroll your iris data even when ACCEPT is lighting. After the enrollment, confirm through the administration PC, in which the administration software is installed, if the recognition has been successfully executed.

## ② User guidance indicators

These indicators light up when you stand in front of the unit, and then inform you that recognition/enrollment will start.

## ③ Built-in color CCTV camera

This is a color camera for surveillance.

For example, it is used for status confirmation if a recognition has not been successfully executed.

## ④ Operation indicators

These indicators show the operation statuses of the unit. The central indicator is lit all the time when power is applied. Refer to p.16.

## ⑤ Front panel

## ⑥ 10 key cover

## ⑦ LED indicator

Shows which numeric key has been pressed.

## ⑧ Numeric keys

These keys are used when you execute ID-and-password authorization instead of iris recognition.

## ⑨ Buzzer-level adjustment hole

Adjusts the level of buzzer, which informs you of recognition/enrollment results. Refer to p.15 for details on level adjustment.

**Note:** Keep away from this hole except for qualified service personnel.

# INSTALLATIONS AND CONNECTIONS

## WARNING

The installation described in these figures should be made by qualified service personnel or trained system installers.

### Cautions:

- This system must be installed within the protected promise in accordance with the National Electrical Code (NFPA70), and the local authorities having jurisdiction.
- Attach this unit to a flat wall with the supplied mounting bracket. After the installation, secure the unit to prevent dropping.

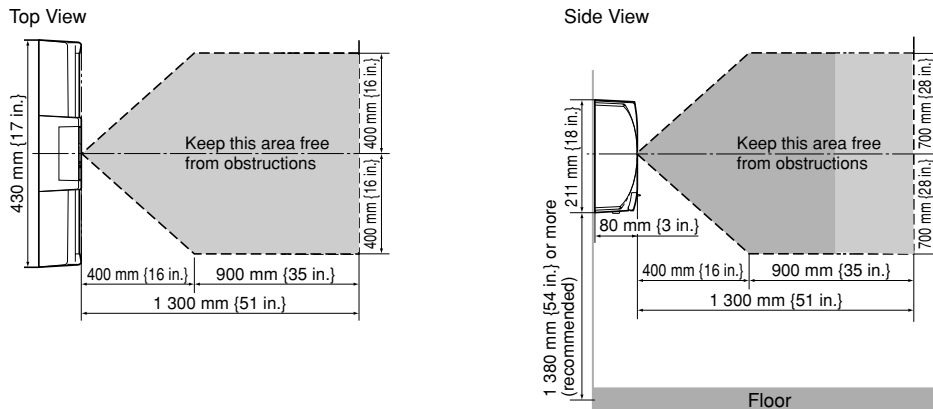
## ■ Caution on Installation

Secure the unit with the supplied mounting bracket to prevent vibration, dropping and injury.

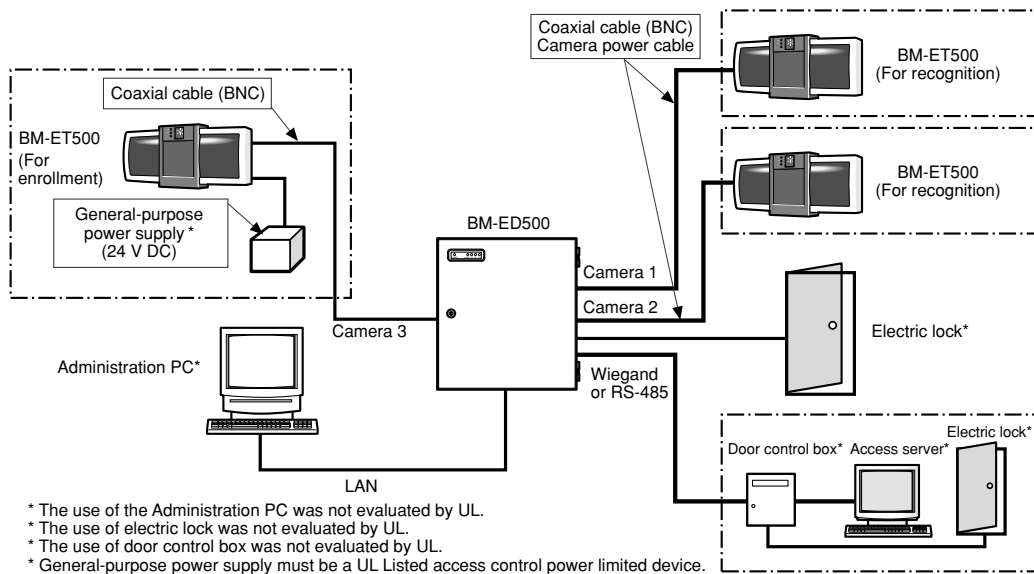
### Notes:

- Keep the unit:
- in the temperature between 0°C and 40°C {between 32°F and 104°F} and the humidity between 30 % and 80 %.

- Keep the unit away from:
- direct sunlight or light reflection.
- incandescent or halogen lighting.
- places where shadow appear over the front panel.
- noise. (for example, places near air conditioners or ventilators)
- electricity.
- outdoor places.
- vibration. (It may cause invalid recognition or injury.)
- Do not place anything inside the space described in the illustration.
- This unit is for indoor use only.
- This unit must be mounted horizontally on the wall.
- Determine the optimum mounting height. The recommendation is between 1.38 m {54 in.} and 1.5 m {60 in.} for enrollment/recognition effectiveness.
- Mount the bracket on the wall. Be sure to provide access for video control and DC power from the control unit.



## System Instruction (Maximum System)



\* The use of the Administration PC was not evaluated by UL.

\* The use of electric lock was not evaluated by UL.

\* The use of door control box was not evaluated by UL.

\* General-purpose power supply must be a UL Listed access control power limited device.

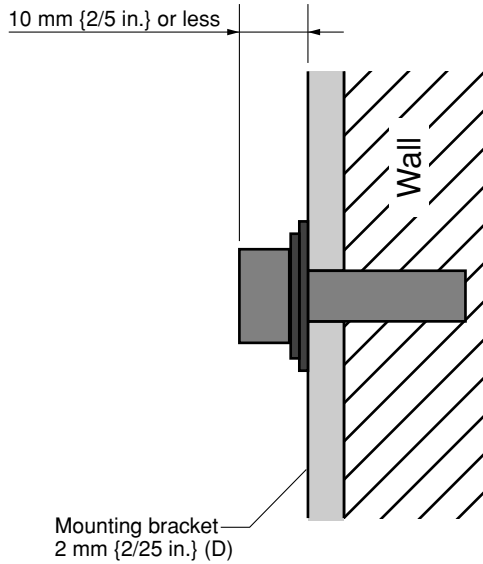
In the case of Wiegand / RS-485 use

# ■ Installation

The unit can be mounted over the wall as described.

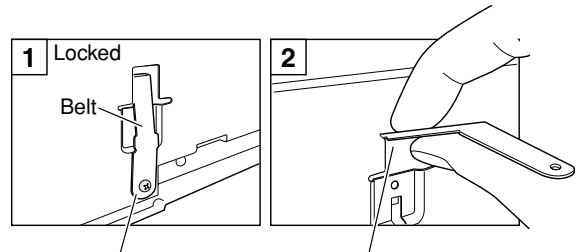
1. Attach the anchor into the wall, and then attach the supplied mounting bracket to the anchor. (Refer to the figure in p.14.)

The anchor bolt should meet the standards shown in the illustration.

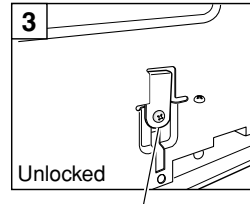


Wall Type	Screw Type
Concrete wall	TAPMARK concrete screw anchors Part No. 21230, Size 6.35 x 57.15 mm {1/4 x 2 -1/4 in.}
Plaster wall	TAPMARK concrete screw anchors Part No. 21240, Size 6.35 x 69.85 mm {1/4 x 2 -3/4 in.}

2. Remove the shipping lock as follows:



- (1) Remove the screw.
- (2) Insert the belt until it hits to the stop.

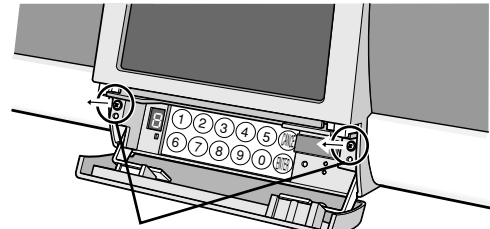


- (3) Bend the belt and secure it with the screw.

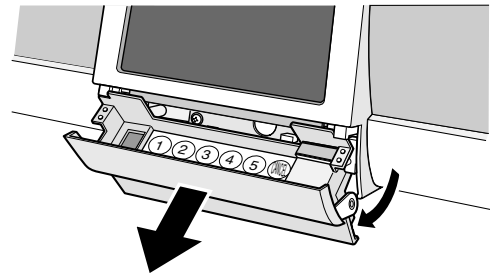
- Take care not to drop the screw inside the unit.
- You can use an M3 screw if you have lost this screw.

3. Remove the numeric keyboard.

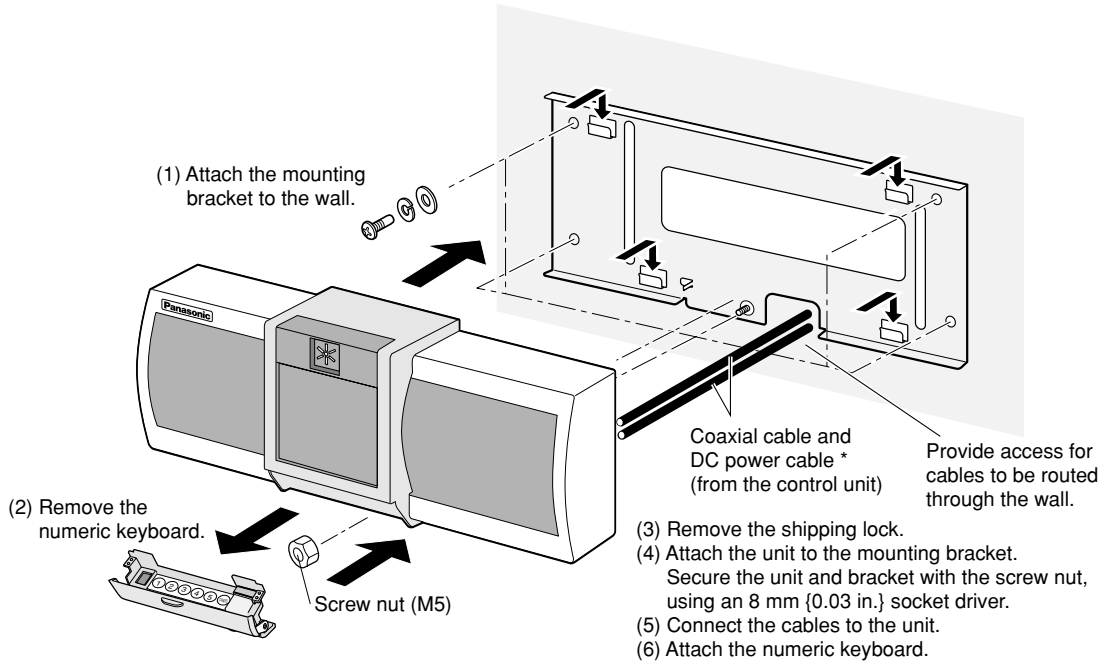
You can remove the keys by taking off the two tamperproof screws (with the supplied tamperproof screw driver tool) and lifting up the keyboard. The control cable should also be removed.



Remove the tamperproof screws.

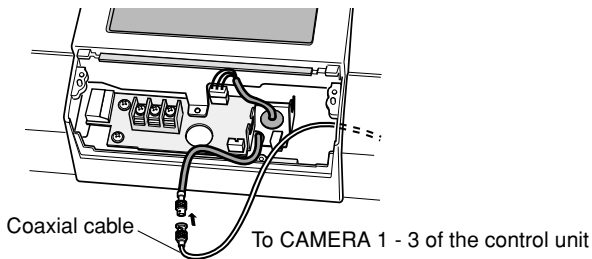


- Attach the unit to the mounting bracket.  
You need to make a hole of approx.  $\varnothing 30$  mm on the wall to pass the cables out of the rear side.

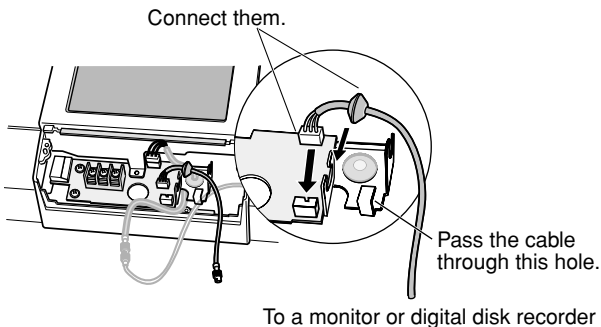


\*Refer to the control unit's operating instructions for the specifications.

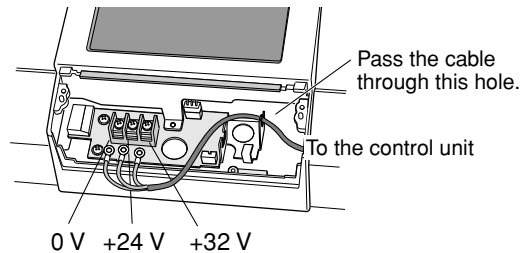
- Connect the coaxial cable to the unit.  
The unit is connected to the control unit (Camera 1 - 3).



- When you use the built-in CCTV camera, connect the supplied video output cable to VIDEO OUT. Then, connect the supplied video output cable and the video input cable of a connected device (for example, a monitor or DVR).



- Connect the DC power cable to the unit.  
If you use power supply from the control unit to the unit, connect the DC power cable to 0 V and +32 V ports.  
If you use 24 V DC power supply from an external power supply device, connect the power cable to 0 V and +24 V ports.

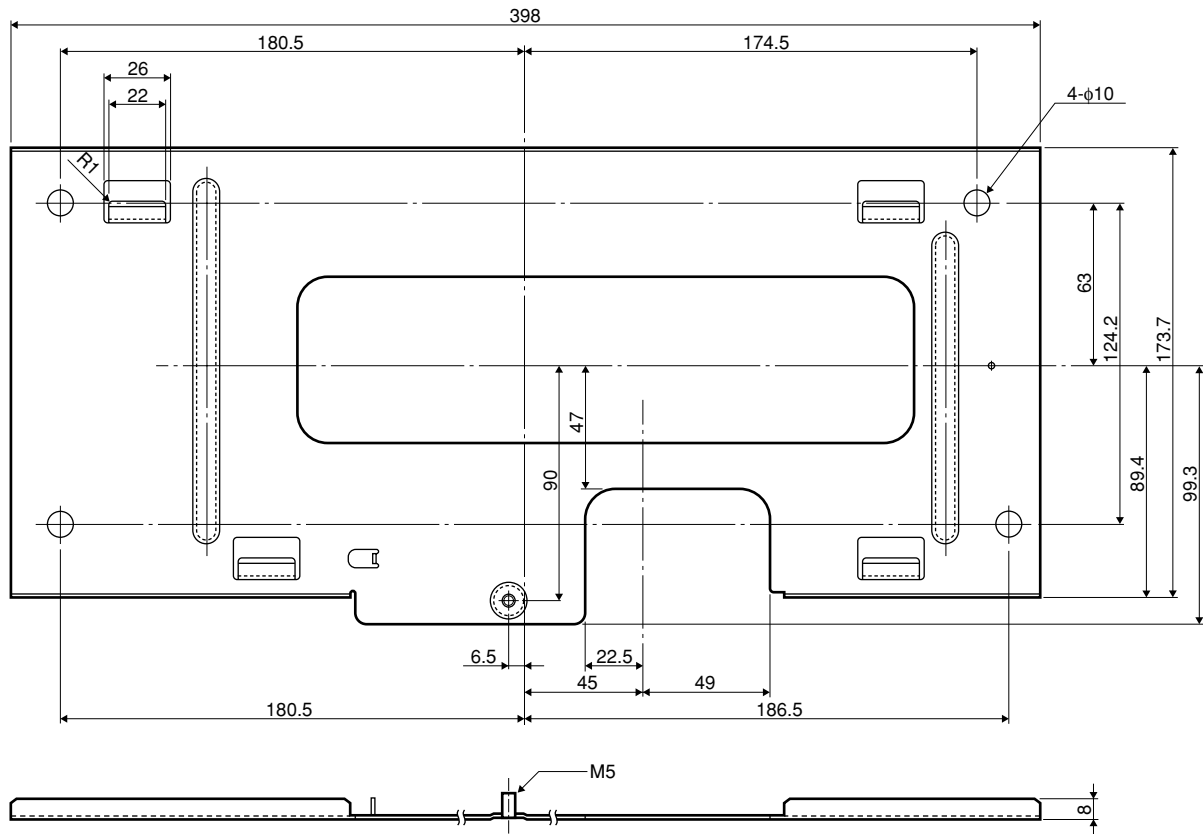


**Caution:** Take DC 24 V power supply from a third-party external power supply device that complies with the safety standard. (Refer to p.21.)

- Attach the numeric keyboard.  
Connect the control cable which has been connected to the numeric keyboard. Then, attach the keyboard with the tamperproof screws.

**Caution:** Insert the cable into the unit so as to avoid pressure from the keyboard.

# DIMENSIONS OF THE MOUNTING BRACKET



(Unit of length: mm)

# ADJUSTMENTS AND MAINTENANCE

## ■ Adjustment

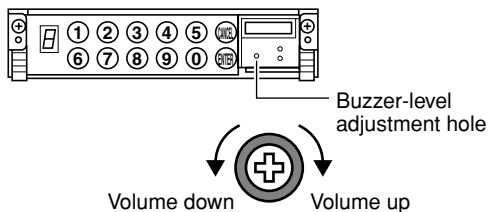
### ● Adjusting the Buzzer Level

Adjust the buzzer level, which informs you of recognition results, as follows.

1. Open the cover of the numeric keyboard.
2. Insert a Phillips precision screwdriver into the buzzer-level adjustment hole.
3. Turn the screwdriver to the right or left to adjust the buzzer level.

**To the right:** The volume will go up.

**To the left:** The volume will go down.

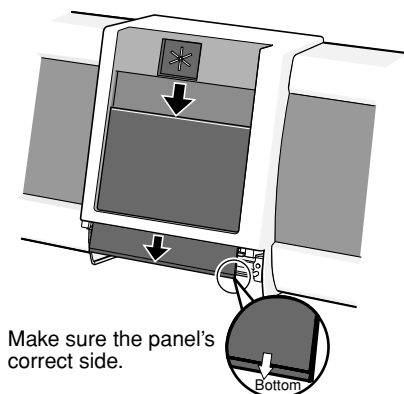


## ■ Maintenance

### ● Replacing the Front Panel

When the supplied front panel has been damaged, you can replace it to a new one.

1. Remove the numeric keyboard. (Refer to p.12.)
2. Remove the front panel, and then replace it to a new one.  
You can take the panel away by sliding down.  
During the replacement, wear gloves on your hand to keep the new panel clean.

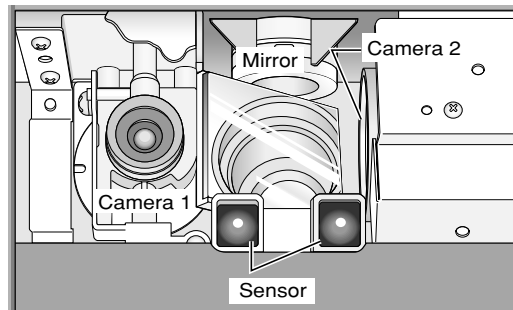


3. When finished, connect the control cable to the numeric keyboard.

### ● Cleaning the Inside of the Camera Unit

There are a mirror, proximity sensor, and two cameras inside the unit. The cameras will be used for capturing a face and irises. If dust is sticking to the cameras, it may cause malfunction. Clean the inside of the camera unit as follows.

1. Remove the numeric keyboard and the front panel.  
(Refer to p.12 and this page.)
2. Blow dust away from the mirror, sensor, Camera 1 and Camera 2 by using a blower, etc.  
If dust still sticks after blowing, wipe away the appliances gently with an eyeglass cleaner or a camera-lens cleaner.
3. After finished, attach the front panel and numeric keyboard to the unit.



#### Notes:

- Keep your hands away from the mirror, Camera 1 and Camera 2. If you touch them directly, it may cause malfunction due to smudges.
- Do not clean the camera unit with a glass-cleaner, thinner or water. It may cause malfunction.
- Clean the camera unit with delicate care. Force may damage the appliance, which may cause trouble.

# RECOGNITION PROCEDURES

There is two ways of identification:

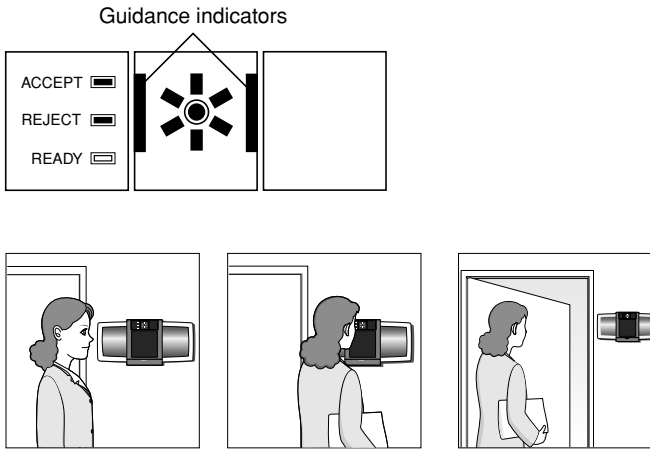
- Iris recognition
- ID-and-password authorization

**Note:** When "READY" is blinking, recognition will be unavailable. Wait until the indicator is on, not blinking.

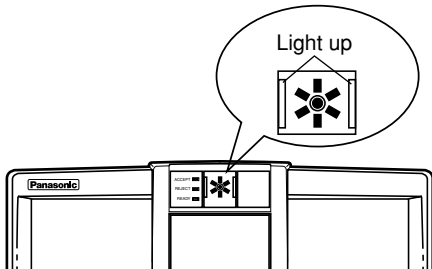
## Iris Recognition

The procedures are as follows.

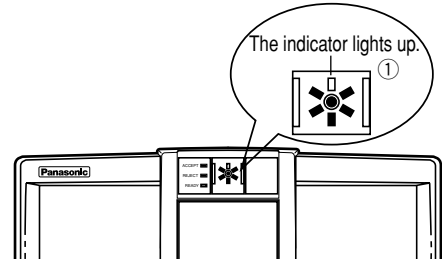
1. Stand in front of the unit and turn your face to the center front panel.  
Stop at the point you can see the two guidance indicators simultaneously, and then turn your face to the unit.



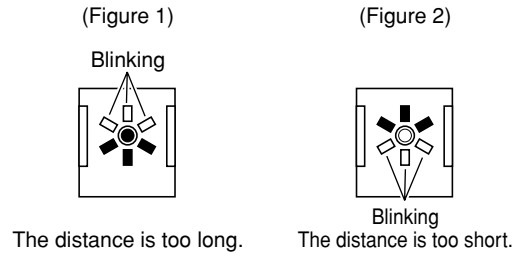
2. The guidance indicators will automatically light up, and iris recognition will start. Then, the buzzer will beep briefly.



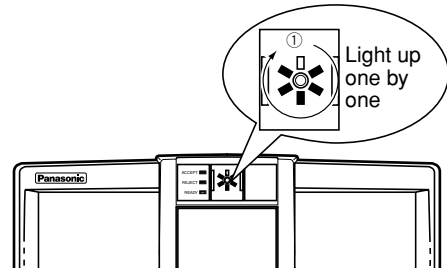
3. Status indicator ① will light up.



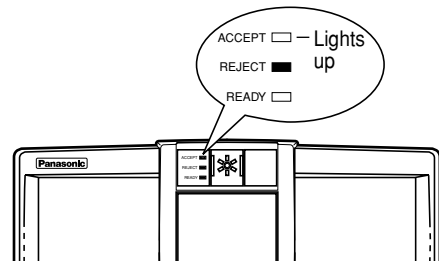
**Note:** Depending on the distance between you and the unit, status indicators will blink as shown in Figure 1 or 2. When the indicators show Figure 1 status, come closer to the unit. When the indicators show Figure 2 status, go farther from the unit.



4. The status indicators will light up in the order shown in the figure.  
When all indicators have lightened up, the recognition will be finished.



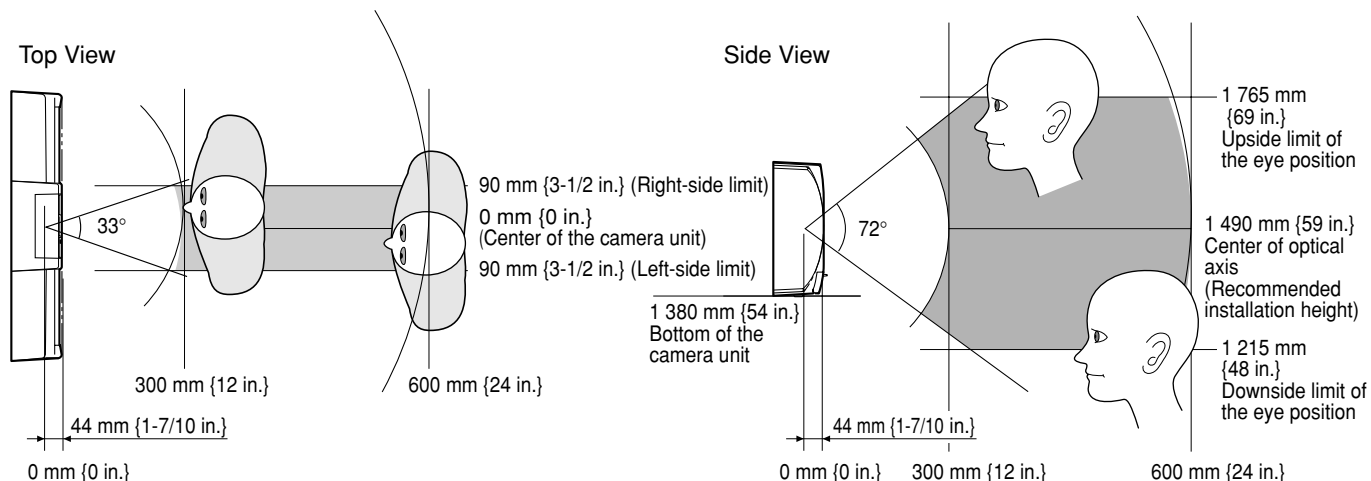
5. When recognition has been successfully executed, ACCEPT will light up and the buzzer will beep.  
When recognition has not been successfully executed (or you have not been enrolled to the unit), REJECT will light up and the buzzer will beep.





### Notes:

- The capturing range is as follows.



- The height of the unit, shown in the figure, is recommendation. Center of optical axis and upside/downside limit of eye position will differ depending on the installation height.
- If your eye position is higher than the upside limit, bend down. If your eye position is lower than the upside limit, get on a pedestal, etc.

## ■ ID-and-password Authorization

You can also identify yourself by entering your ID and password with numeric keys.

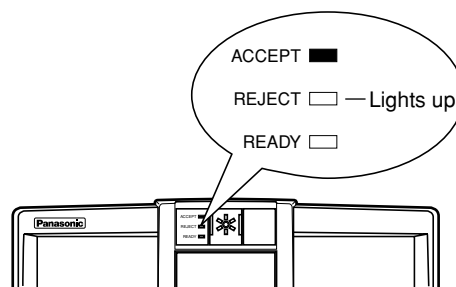
The procedures are as follows.

1. Open the keyboard cover at the bottom of the unit.  
No indicator is lighting at this point.
2. Press a numeric key. (Any key is OK.)  
“0” will light up on the LED indicator.
3. Enter your ID number by pressing numeric keys, and then press ENTER.  
The digit number will light up on the LED indicator.  
For example, if you enter a five-digit password, “5” will light up on the LED indicator. (If the digit is 10 or more, the end number will light up.)  
**Note:** If you cancel ID-and-password-authorization and return to iris recognition, press CANCEL.
4. Enter your password by pressing numeric keys, and then press ENTER.  
The digit number will appear on the LED indicator.  
For example, if you enter a five-digit password, “5” will light up on the LED indicator. (If the digit is 10 or more, the end number will light up.)  
**Note:** If you cancel ID-and-password-authorization and return to iris recognition, press CANCEL.

When the ID and password are matching with the enrolled information, “ACCEPT” will light up and the buzzer will beep briefly.

### When you have mistaken the entry of ID or password

“REJECT” will light up and the buzzer will beep.



**Caution:** Avoid setting the following examples to your ID or password.

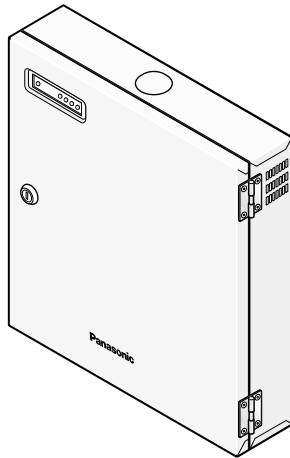
- Public information such as your birthday or phone number
- Repeated numerics such as 1111 or 7777
- Sequential numerics such as 1234 or 7890

**Note:** The digit number differs depends on the system environment.

When you have forgotten your ID or password, contact the system administrator.

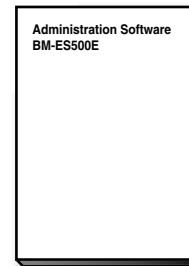
## ADDITIONAL SYSTEM COMPONENTS

### ■ Control Unit BM-ED500



This product is necessary for iris data recognition/enrollment and controlling an electric lock.

### ■ Administration Software BM-ES500E



This product is necessary for administering iris data, ID data and passwords.

# TROUBLESHOOTING

Check to see the following before request for repair.

If a trouble cannot be corrected even after checking and trying remedy, contact your dealer.

Problem	Check item	Remedy
System does not power up.	The power of the control unit may be turned off. (The control unit supply the power to the unit.)	Confirm if the power of the control unit is turned on. (Refer to the control unit's operating instructions.)
	Third party external power may be off.	
Enrollment/Recognition is invalid.	This unit may be disconnected from the control unit.	Refer to the dealer or service personnel.
	Your iris data, ID, or password may not have been registered.	Refer to the system administrator.
	Your ID or password may be wrong.	
	The front panel may have dust or be damaged.	Remove the dust from the front panel. If the panel has been damaged, replace it with a new one. (Refer to p.15.)
	The coaxial cable may not be connected between the unit's coaxial cable connector and the control unit's iris camera connector (CAMERA 1 to 3).	Confirm the connection. (Refer to p.13.)
	You may not have opened your eyes widely during capturing.	Open your eye widely during capturing.
	You were wearing glasses or sunglasses at the time of recognition.	Take off your glasses/sunglasses before recognition.
	Smudges may be on the lenses.	Wipe the lenses with a cloth before recognition.
	You may be wearing sunglasses whose lens color is too dark to be captured.	Take off your sunglasses before recognition.
A contact lens may have slipped off the eye's corneal surface, and the contact edge may be hiding the iris images.	Move the contact lens back to the corneal surface by blinking.	

The status indicator does not light up.	The power of the control unit may be turned off. (The control unit supply the power to the unit.)	Confirm if the power of the control unit is turned on. (Refer to the control unit's operating instructions.)
	Third party external power may be off.	
	This unit may be disconnected from the control unit.	Refer to the dealer or service personnel.
The buzzer does not sound.	The buzzer level may be too low to be heard.	Adjust the buzzer level. (Refer to p.15.)

# SPECIFICATIONS

## General

Power source:	32 V, 3 A DC (when supplied from Control Unit BM-ED500) 24 V, 4 A DC (when supplied from an external power supply device*)
Power consumption:	30 W (while waiting) 60 W (max. while operating)
Iris recognition time:	3 seconds
Ambient operating temperature:	0 °C to +40 °C {32 °F to 104 °F}
Ambient operating humidity:	30 % to 80 % (relative humidity)
Dimensions:	430 mm (W) x 211 mm (H) x 80 mm (D) {17 in. (W) x 8-3/10 in. (H) x 3-1/10 in. (D)}
Weight:	4.5 kg {10 lbs.}

## Input/Output

CCTV camera output:	1 V[p-p]/75 $\Omega$ (Not investigated UL 294)
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\* The external power supply should meet the following specifications and must be a UL Listed access control power limited device.

Output voltage:	24 V DC
Output current capacity:	0 A to 4.5 A
Rated ripple voltage/Ripple noise:	150 mV[p-p] or less
Overcurrent protection:	Enabled (mandatory)

**Note:** We recommend the use of a third-party external power supply device when the iris camera is located more than 20 meters {65 ft.} away from the control unit.

# STANDARD ACCESSORIES

Operating instructions (This document)\*<sup>1</sup> ..... 1 pc.

The following parts are used during installation procedures.

Mounting bracket ..... 1 pc.

Screw nut (M5) ..... 1 pc.

Tamperproof screw driver tool\*<sup>1</sup> ..... 1 pc.

Video output cable (for the built-in color CCTV camera) ..... 1 pc.

Operating instruction sticker\*<sup>2</sup> ..... 1 pc.

\*<sup>1</sup> You will use it for installation. Keep it in a safe place after use.

\*<sup>2</sup> Stick to a viewable area (except for the front panel) if necessary.



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