Utilizing its technological prowess and extensive experience, Mitsubishi Electric has remained a leader in the vertical transportation market since entering the business in 1931. The Company’s creative, innovative spirit, represented by production of the world’s first spiral escalator and elevator group-control systems that use artificial-intelligence technologies, continues to receive high evaluations industry-wide. Our products and systems are renowned for their high levels of quality, reliability and safety; and it is this sense of security and trust fostered with building owners and end-users alike that has led to the global expansion of our elevator/escalator business and the after-sales network to service it.

We understand responsibilities as a good corporate citizen, and continue to implement measures for protecting the environment and ensuring a sustainable society for future generations. A number of original technologies are being introduced to ensure more efficient products, systems and manufacturing operations, thereby enhancing productivity, reducing energy consumption and providing smoother, faster and more comfortable vertical transportation systems.
Premium Elevators Custom-designed to Match Your Needs

Mitsubishi Electric high-speed elevators are designed to keep pace with the vertical growth of cities as buildings soar to ever greater heights. Our premium elevators guarantee high levels of passenger safety and comfort, and can be customized for diverse applications including office buildings, hotels and shopping centers. We can tailor specifications to meet your exact needs and add a distinctive touch that sets your building apart from the rest.
Based on our policy, “Quality in Motion”, we provide elevators and escalators that will satisfy our customers with high levels of comfort, efficiency, ecology and safety.

**Principle**

Based on our policy, “Quality in Motion”, we provide elevators and escalators that will satisfy our customers with high levels of comfort, efficiency, ecology and safety. In order to satisfy customers in all aspects of comfort, efficiency and safety while realizing a sustainable society, quality must be of the highest level in all products and business activities, while priority is placed on consideration for the environment. As the times change, Mitsubishi Electric promises to utilize the collective strengths of its advanced and environmental technologies to offer its customers safe and reliable products while contributing to society.

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**Application**

- Speed/Comfort
  - (kg)
  - (m/sec)
  - 10.0
  - 9.0
  - 8.0
  - 7.0
  - 6.0
  - 5.0
  - 4.0
  - 3.5
  - 3.0
  - 2.5
  - 2.0
  - 750 900 1000 1200 2250 2500 3000 1350 1600 1800 2000

**NexWay**
The amount of lateral vibration generated by high-speed elevator cars is tremendous. As a world’s first innovation in the industry, Mitsubishi Electric’s Active Roller Guide technology reduces this vibration by approximately 50%. It works via an accelerometer that detects car vibration during operation, along with actuators that cancel the vibration through a controlled electromagnetic force. Mitsubishi Electric Active Roller Guides ensure a more comfortable ride than elevators employing conventional roller guides.

Mitsubishi Electric’s new sfleX-rope™ comprising bundles of high-intensity steel wire strands, each covered with plastic, offers higher intensity than conventional rope for safe operation despite the greater weight of longer ropes. Each wire has a higher density and wider cross-sectional area than conventional rope, which helps to reduce rope stretching caused when passengers step into the elevator.

The sfleX-rope™ is a trademark of Mitsubishi Electric Corporation.

The joint-lapped core built into the PM motor of the traction machine features flexible joints. The iron core acts like a hinge, which allows coils to be wound around the core more densely, resulting in improved motor efficiency and compactness. A high-density magnetic field is produced, enabling lower use of energy and resources and reduced CO₂ emissions.

Traction Machine with PM Motor

(PM motor: permanent magnet motor)

Super High-rise Rope Mechanics

The sfleX-rope™ is a trademark of Mitsubishi Electric Corporation.

Active Roller Guide (Optional*)

The amount of lateral vibration generated by high-speed elevator cars is tremendous. As a world’s first innovation in the industry, Mitsubishi Electric’s Active Roller Guide technology reduces this vibration by approximately 50%. It works via an accelerometer that detects car vibration during operation, along with actuators that cancel the vibration through a controlled electromagnetic force. Mitsubishi Electric Active Roller Guides ensure a more comfortable ride than elevators employing conventional roller guides.

Note:
* Please consult our local agents for details.

Speed

Comfort
Using Energy Wisely

Our long-term commitment to developing energy-efficient elevators has created systems and functions that make intelligent use of power.

Milestones of Energy-saving Technologies in Elevator Development

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor</td>
<td>DC motor</td>
<td>Induction motor</td>
<td>Permanent magnet motor</td>
<td>Gearless</td>
<td>Gearless</td>
</tr>
<tr>
<td>Traction machine</td>
<td>Helical</td>
<td>Gearless</td>
<td></td>
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<td></td>
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<tr>
<td>Motor drive</td>
<td>Ward Leonard system</td>
<td>Thyristor</td>
<td>VVF* control</td>
<td>Microcomputer</td>
<td></td>
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<tr>
<td>Power consumption/CO2 emissions *1</td>
<td>100%</td>
<td>95%</td>
<td>72%</td>
<td>62%</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
</tr>
</tbody>
</table>

Notes:
*1 Variable Voltage, Variable Frequency
*2 CO2 emissions in this table are from elevator operation and do not include emissions from manufacturing, transportation and other processes.

Devices that Use Less Energy

LED Lighting (Optional)

Used for ceiling lights and hall lanterns, LEDs boost the overall energy performance of the building. Furthermore, a long service life eliminates the need for frequent lamp replacement.

Maximizing Operational Efficiency and Minimizing Energy Consumption

Energy-saving Operation — Allocation Control (ESO-W) (ZAI-2200C only)

This system selects the elevator in a group that best balances operational efficiency and energy consumption. Priority is given to operational efficiency during peak hours and energy efficiency during non-peak hours.

Through a maximum 10% reduction in energy consumption compared to our conventional system, this system allows building owners to cut energy costs without sacrificing passenger convenience.

Safety

Emergency Situations

Emergency Operations

Enhance safety by adding emergency operation features which quickly respond to a power failure, fire or earthquake. (Please refer to page 37 for details.)

Emergency Operations

- **Power failure**
  - Operation by Emergency Power Source — Automatic (OEPS) (Optional)
    - Upon power failure, predetermined cars use the building's emergency power supply to move to a specified floor and open the doors for passengers to evacuate. After all cars have arrived, the predetermined cars will resume normal operation.

- **Fire**
  - Fire Emergency Return (FER) (Optional)*
    - When a key switch or the building's fire sensor is activated, all cars immediately return to a specified floor and open the doors to facilitate the safe evacuation of passengers.
  - Firefighters' Emergency Operation (FE) (Optional)*
    - When the fire operation switch is activated, the car immediately returns to a predetermined floor. The car then responds only to car calls, which facilitates firefighting and rescue operations.

- **Earthquake**
  - Earthquake Emergency Return (EER-P/EER-S) (Optional)
    - When a primary and/or secondary wave seismic sensor is activated, all cars stop at the nearest floor and park there with the doors open to facilitate the safe evacuation of passengers.

For Safe Boarding

Door Safety Devices

Our reliable safety devices ensure that the doors are clear to open and close. Depending on the type of sensor, the detection area differs.

Note:
* Please consult our local agents for the production terms, etc.
**Efficiency**

**Group Control Systems: ΣAI-22 and ΣAI-2200C**

ΣAI-22 and ΣAI-2200C control multiple elevators optimally according to the building size.

<table>
<thead>
<tr>
<th>Group control systems</th>
<th>Suitable building size</th>
<th>Number of cars per group</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΣAI-22 system</td>
<td>Small/medium</td>
<td>3 to 4</td>
</tr>
<tr>
<td>ΣAI-2200C system</td>
<td>Large, irregular, and complex traffic conditions</td>
<td>3 to 8</td>
</tr>
</tbody>
</table>

**Performance**

<table>
<thead>
<tr>
<th>Average waiting time</th>
<th>Long-wait rate (60 seconds or longer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved: Max. 40%</td>
<td>Improved: Max. 80%</td>
</tr>
</tbody>
</table>

**Forecasting Near-future Hall Calls to Reduce Long Waits (ΣAI-2200C only)**

**Cooperative Optimization Assignment**

When a hall call is registered, the algorithm predicts near-future calls that could require long waits. Through evaluation of the registered hall call and the forecasted call, the best car is assigned. All cars work cooperatively for optimum operation.

**Without DOAS**

Passengers wait for cars wondering which car will arrive first. Once a car arrives, regardless of the destination, passengers rush to get into the car.

**With DOAS**

When passengers enter a destination floor at a hall, the hall operating panel indicates which elevator to take. As passengers proceed to the assigned elevator, the car is on its way and there is no hurry when the car arrives.

**Advantages of DOAS at Hall**

**Without DOAS**

- Wait times are unpredictable.
- Passengers may rush to enter the first available car.

**With DOAS**

- Wait times are predictable and minimized.
- Passengers enter the designated car in a more orderly manner.

**Example of hall arrangement**

(The elevator number plates are to be supplied by customers, and hall lanterns are available as options.)

**Destination Oriented Allocation System: DOAS (ΣAI-2200C only) (Optional)**

**Allocating Passengers to Cars Depending on Destination Floors**

When a passenger enters a destination floor at a hall, the hall operating panel immediately indicates which car will serve the floor. Because the destination floor is already registered, the passenger does not need to press a button in the car. Furthermore, dispersing passengers by destination prevents congestion in cars and minimizes waiting and traveling time.

(Car destination floor indicator can be installed on the car operating panel as an option to display which floors the car stops at.)
Elevator Monitoring and Control System: MelEye (Optional)

MelEye closely observes the operational status of elevators that handle continually changing passenger traffic. This allows building managers to rapidly respond to changing traffic patterns, thus optimizing the performance of elevators and maximizing the added value of the whole building. The application of the latest network technology has also greatly increased the number of controllable elevators, which minimizes the cost spent on facilities such as supervisory rooms and monitors.

MelEye is our solution to futuristic building traffic monitoring systems.

MelEye’s user-friendly screen shows the detailed operational status of the elevators in real time.

The past fault logs of the elevators and escalators are recorded in addition to the operation logs of the computer.

A computer allows remote control of special and emergency operations.

Note:
* Please consult our local agents for the production terms, etc.

---

**LCD Information Display**
(10.4- or 15-inch)

The cutting-edge LCD display delivers elevator information with stereoscopic direction arrows and animated pictures, and entertains the passengers with DVD playback/television (NTSC/PAL).

Example display of partial-screen animated picture

**Colors**

Select the best color from our five popular and eye-catching background colors.

Urban Black Fine Green Stylish Blue Modern White Elegance Brown

**Language**

Standard elevator information, and date and time are available in English (US, UK or Singapore), Chinese, French, Japanese, Portuguese or Spanish.

Chinese French Japanese Portuguese Spanish

Please refer to the Information Display brochure for details.
Design Image
Ceiling Variations & Car Finishes

**Car Design Example**

**Customized-1**

Distinctive design using vaulted lighting and marble floor finish

- Ceiling (Customized-1): Painted steel sheet [Y033: White]
- Lighting: Central indirect lighting and downlights
- Walls: Colored stainless-steel with etched pattern (champagne gold)
- Transom panel: Stainless-steel, mirror-finish
- Doors: Colored stainless-steel with etched pattern (champagne gold)
- Front return panels: Stainless-steel, mirror-finish
- Kickplate: Stainless-steel, hairline-finish
- Flooring: Marble (supplied by customer)
- Car operating panel: CBV3-N732
- Handrails: YH-59M
- Mirrors: YZ-55SN

**Car Design Example**

**Customized-2**

Indirect lighting and downlights create a stylish atmosphere

- Ceiling (Customized-2): Painted steel sheet [Y033: White]
- Lighting: Central indirect lighting and downlights
- Walls: Painted steel sheet
- Transom panel: Painted steel sheet
- Doors: Painted steel sheet
- Front return panels: Stainless-steel, hairline-finish
- Kickplate: Stainless-steel, hairline-finish
- Flooring: Marble (supplied by customer)
- Car operating panel: CBV1-N712
- Handrails: YH-59S
- Mirrors: None

Actual colors may differ slightly from those shown.
**Ceiling Variations & Car Finishes**

**L210** Sophisticated atmosphere created by downlights and shadows

---

**Car Design Example**

- Lighting: Downlights (LEDs)
- Walls: Colored stainless-steel, hairline-finish (Bronze)
- Transom panel: Colored stainless-steel, hairline-finish (Bronze)
- Doors: Colored stainless-steel, hairline-finish (Bronze)
- Front return panels: Stainless-steel, hairline-finish
- Kickplate: Stainless-steel, hairline-finish
- Flooring: PR812: Dim-gray
- Car operating panel: CBV1-N732
- Handrail: YH-59S (three sides)
- Mirror: None

---

**Design Change variations**

**Ceiling (L210S): Panel: Stainless-steel, hairline-finish**
- Walls: Stainless-steel, hairline-finish
- Flooring: PR812: Dim-gray
- Handrail: YH-59S (rear side only)
- Mirror: None

**Ceiling (L210S): Panel: Stainless-steel, hairline-finish**
- Walls: Painted steel sheet [Y014: Red-violet]
- Flooring: PR812: Dim-gray
- Handrail: None
- Mirror: None

**Ceiling (L210): Panel: Painted steel sheet [Y033: White]**
- Walls: Painted steel sheet [Y033: White]
- Flooring: PR803: Gray
- Handrail: YH-59M (rear side only)
- Mirror: YZ-55SN (Full height)

---

**Ceiling (L210): Panel: Painted steel sheet [Y055: Dark gray]**
- Walls: Stainless-steel, hairline-finish with etched pattern (EPa-2)
- Flooring: PR810: Ochre
- Handrail: YH-59S (three sides)
- Mirror: YZ-52A (Half-size)

---

**Ceiling (L210): Panel: Painted steel sheet [Y033: White]**
- Walls: Painted steel sheet [Y033: White]
- Flooring: PR803: Gray
- Handrail: YH-59M (rear side only)
- Mirror: YZ-55SN (Full height)

---

Actual colors may differ slightly from those shown.
Ceiling Variations & Car Finishes

L400  Softly lit illuminated ceiling with a sparkling slitted frame

Car Design Example

Ceiling (L400)  Panel: Painted steel sheet [Y055: Dark gray]
Lighting: Indirect lighting (LEDs)
Walls  Colored stainless-steel, hairline-finish with etched pattern (EPA-4)
Transom panel  Stainless-steel, hairline-finish with etched pattern (EPA-4)
Doors  Stainless-steel, hairline-finish with etched pattern (EPA-4)
Front return panels  Stainless-steel, hairline-finish
Kickplate  Stainless-steel, hairline-finish
Flooring  PR810: Ocher
Car operating panel  CBV3-N712
Handrail  YH-59M (rear side only)
Mirror  None

Design Change variations

Ceiling (L400)  Panel: Painted steel sheet [Y055: Dark gray]
Walls  Painted stainless-steel [EPA-4] (rear side only)
Flooring  PR812: Dim-gray
Handrail  None
Mirror  YZ-52A (Half-size)

Ceiling (L400)  Panel: Painted steel sheet [Y071: Neutral beige]
Walls  Painted stainless-steel, hairline-finish
Flooring  PR812: Dim-gray
Handrail  YH-59S (rear side only)
Mirror  None

Ceiling (L400)  Panel: Painted steel sheet [Y055: Dark gray]
Walls  Painted stainless-steel [EPA-4] (rear side only)
Flooring  PR812: Dim-gray
Handrail  None
Mirror  YZ-52A (Half-size)
Ceiling Variations & Car Finishes

### N300

**Terraced design with illusion of increased ceiling height**

#### Car Design Example

- **Ceiling**: Panel: N300 (in above image) – Painted steel sheet [Y033: White] or N300S (optional) – Stainless-steel, hairline-finish
- **Walls**: Painted steel sheet [Y016: Light brown]
- **Transom panel**: Painted steel sheet [Y016: Light brown]
- **Doors**: Painted steel sheet [Y016: Light brown]
- **Front return panels**: Stainless-steel, hairline-finish
- **Kickplate**: Stainless-steel, hairline-finish
- **Lighting**: Central indirect lighting and downlights
- **Flooring**: PR803: Gray
- **Handrail**: YH-59S (rear side only)
- **Mirror**: None

#### Design Change variations

1. **Ceiling (N300S, Panel): Stainless-steel, hairline-finish**
   - **Walls**: Stainless-steel, hairline-finish with etched pattern (EPA-3)
   - **Flooring**: PR812: Dim-gray
   - **Handrail**: YH-59M (rear side only)
   - **Mirror**: None

2. **Ceiling (N300, Panel): Painted steel sheet [Y033: White]**
   - **Walls**: Stainless-steel, hairline-finish
   - **Flooring**: PR803: Gray
   - **Handrail**: None
   - **Mirror**: None

3. **Ceiling (N300, Panel): Painted steel sheet [Y033: White]**
   - **Walls**: Painted steel sheet [Y004: Beige]
   - **Flooring**: PR812: Dim-gray
   - **Handrail**: YH-59S (three sides)
   - **Mirror**: YZ-53A (2-mirror set)

Actual colors may differ slightly from those shown.
Car Operating Panels

For side wall

**Notes:**

*1: The symbol ■ is replaced with a number representing illumination color (e.g., CBV1, CBV3, etc.). Please refer to page 25 for illumination colors.
*2: Faceplates with stainless-steel, mirror-finish are also available (optional). Please consult our local agents for details.
*3: The types in parentheses ( ) show auxiliary car operating panels (optional). The design is slightly different from the above images. Please consult our local agents for further information such as installation location.
*4: Some letters of the alphabet are not available. Please consult our local agents for details.

Actual colors may differ slightly from those shown.
Mirrors

YZ-52A
Half-size

YZ-53A
2-mirror set

YZ-55SN
Full height

Handrails

YH-59S
(Stainless-steel, hairline-finish)

YH-59M
(Stainless-steel, mirror-finish)

YH-59G
(Stainless-steel, mirror-finish [Gold])

YH-57S
(Stainless-steel, hairline-finish)

Actual colors may differ slightly from those shown.
Entrance Finishes

E-102 Narrow Jamb

E-312 Square Jamb with Transom Panel
E-212 Square Jamb with Transom Panel

Entrance Design Example of E-312
Jamb
Stainless-steel, hairline-finish
Transom panel
Colored stainless-steel with etched pattern (black)
Doors
Colored stainless-steel with etched pattern (black)
Hall lantern
HLV-A31S
Hall button
HBV3-C710N

Entrance Design Example

Jamb
Stainless-steel, hairline-finish
Doors
Stainless-steel, hairline-finish
Hall position indicator and button
PIV1-A1010N

Entrance Design Example of E-302

Jamb
Stainless-steel, hairline-finish
Doors
Painted steel sheet (Y033: White)
Hall lantern
HLV-A16S
Hall button
HBV1-C710N

Entrance Design Example of E-312

Jamb
Stainless-steel, hairline-finish
Transom panel
Colored stainless-steel with etched pattern (black)
Doors
Colored stainless-steel with etched pattern (black)
Hall lantern
HLV-A31S
Hall button
HBV3-C710N

Note:
* Please consult our local agents for the production terms, etc.

Actual colors may differ slightly from those shown.
Hall Signal Fixtures

---

### Hall Position Indicators and Buttons

**Segment LED Indicator**
- With plastic case

**Dot LED Indicator**

**LCD Indicator**

**Hall Buttons**
- With plastic case

**Square Buttons (HBN-C710N only)**

**Button Line-up**

Buttons accented with LED halo illumination illuminated characters and halos attract user’s attention. Tactile button (stainless-steel with non-directional hairline-finish) is available in three illumination colors: yellow-orange, white and blue.

**Notes:**
- Segment LED indicators cannot display some letters of alphabet. Please consult our local agents for details.
- Dot LED indicators are available (optional). Please consult our local agents for details.
- Faceplates with stainless-steel, mirror-finish are also available (optional). Please consult our local agents for details.
- These types are applicable to EN81-70 compliant elevators only in 1C-2BC where one car is controlled independently.
- These types are not applicable to elevators complying with EN81-10.

---

### Hall Lanterns

- HLV-A31S
- HLH-A31S
- HLV-A16S
- HLH-A16S

### LCD Position Indicator

- PIH-C117 (5.7-inch)

### LCD Information Displays

- PIH-C216 (10.4-inch)

---

### Hall Position Indicators with Lantern

- PIE-B47*2

---

Cross-section of boxless fixtures

These hall signal fixtures can be easily mounted on the wall surface without having to cut into the wall to embed the back box.

---

Actual colors may differ slightly from those shown.
10.4-inch Touch Screen

Surface mounted type

Keypad

Dot LED display (orange when illuminated)

HSVF-C212

HSVF-C222

HSVF-C232

(with speaker for audio guidance)

Star: Tactile button  Others: Flat buttons  (stainless-steel matte)

Card reader mount option

Card reader mount option is available for all left fixtures.

10.4-inch Touch Screen

Surface mounted type

10.4-inch Touch Screen

Surface mounted type

Keypad

Dot LED display (orange when illuminated)

HSVF-C212

HSVF-C222

HSVF-C232

(with speaker for audio guidance)

Star: Tactile button  Others: Flat buttons  (stainless-steel matte)

Card reader mount option

Card reader mount option is available for all left fixtures.

Notes
*1: Please consult our local agents for the production terms, etc.
*2: Card reader is to be supplied by customer. Please consult our local agents for details.
*3: Complies with EN81-70. The keypad arrangement can be changed if compliance with EN81-70 is not required.

For details of designs and other options, refer to the ΣAI-2200C brochure.

Actual colors may differ slightly from those shown.
**Materials and Colors**

### Car Finishes

<table>
<thead>
<tr>
<th>Materials/Finishes</th>
<th>Wall</th>
<th>Transom panel</th>
<th>Doors</th>
<th>Interroom panels</th>
<th>Kickplate</th>
<th>Flooring</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colored stainless-steel, hairline-finish*1</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
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<tr>
<td>Etching patterns (gold or bronze)*2</td>
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<td>Optional</td>
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<tr>
<td>Painted steel sheet</td>
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<tr>
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</tr>
<tr>
<td>Colored stainless-steel, mirror-finish (SUS-M)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
</tbody>
</table>

*Please refer to the etching finish pattern book, EFA1, for details.

### Ceiling

- Painted steel sheet
  - White
  - Dark gray
  - Light beige

### Flooring

- Durable vinyl tiles
  - PR801 Cream beige
  - PR803 Gray
  - PR812 Dim-gray

### [Car] Walls, doors and transom panel

- Colored stainless-steel, hairline-finish
  - Gold
  - Bronze
- Etching patterns (gold or bronze)
- Painted steel sheet
- Stainless-steel, hairline-finish with etched pattern (SUS-HE)

### [Hall] Doors, transom panel and jamb

- Stainless-steel
  - Hairline-finish
  - Mirror-finish
  - Etching patterns (stainless-steel)

### [Hall] Doors and transom panel

- Painted finish
- Etching patterns

### Entrance Finishes

<table>
<thead>
<tr>
<th>Materials/Finishes</th>
<th>Lamb</th>
<th>Transom panel</th>
<th>Doors</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painted steel sheet</td>
<td>Optional</td>
<td>Optional</td>
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<tr>
<td>Stainless-steel, hairline-finish with etched pattern (SUS-HE)</td>
<td>Optional</td>
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<td>Colored stainless-steel, hairline-finish with etched pattern (colored SUS-HL)</td>
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<tr>
<td>Colored stainless-steel, mirror-finish (colored SUS-M)</td>
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<td>Optional</td>
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</tr>
</tbody>
</table>

*Please refer to the etching finish pattern book, EFA1, for details.

### Note:
- *1: Etching pattern EPA-1~6 only.
- *2: Etching pattern EPA-1~3 only.
- *3: Only available in dark gray.
- *4: Please consult our local agents for the production terms, etc.

Actual colors may differ slightly from those shown.
### DOOR OPERATION FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake Emergency Return</td>
<td>EER-F, EER-B</td>
<td>An activation of primary and/or secondary wave-sensing sensors, all cars stop at the nearest floor, and park there with the doors open to facilitate the safe evacuation of passengers.</td>
</tr>
<tr>
<td>Emergency Car Lighting</td>
<td>ELC</td>
<td>Car lighting turns on immediately when power fails, providing a minimum level of lighting within the car. (Choice of dry-cell battery or nickel-charge battery.)</td>
</tr>
<tr>
<td>Fire Emergency Return</td>
<td>FER</td>
<td>Upon activation of a call switch on a building's hall operating panel, all cars immediately return to a specified evacuation floor and the doors open to facilitate the safe evacuation of passengers.</td>
</tr>
<tr>
<td>Firefighters’ Emergency Operation</td>
<td>FE</td>
<td>During a fire, where the fire operation switch is activated, the car calls of a specified car and all hall calls are canceled and the car immediately returns to a predetermined floor. The car then responds only to car calls which facilitate firefighting and rescue operation.</td>
</tr>
<tr>
<td>Multiple Hallway Elevators &amp; Monitors and Control System</td>
<td>MHE</td>
<td>Each elevator's status and operation can be monitored and controlled using an advanced web-based technology which provides an interface through personal computer. Special optional features such as preparation of traffic statistics and analysis are also available.</td>
</tr>
<tr>
<td>Automatic Hallway Landing Device</td>
<td>HILD</td>
<td>Upon power failure, a car equipped with this function automatically moves and stops at the nearest floor using a rechargeable battery, and the doors open to facilitate the safe evacuation of passengers. (Maximum allowable floor-to-floor distance is 10 meters.)</td>
</tr>
<tr>
<td>Operation by Emergency Power Source — Automatic</td>
<td>OGPS</td>
<td>Upon power failure, predetermined cars uses the building's emergency power supply to move to a specified floor, where the doors then open to facilitate the safe evacuation of passengers. After all cars have arrived, predetermined cars resume normal operation.</td>
</tr>
</tbody>
</table>

### DOOR OPERATIONS

- **Automatic Bypass**
- **Door Load Detector**
- **Reopen with Hall Button**
- **Control System**
- **Escalators Monitoring and Return**
- **Hall Motion Sensor**
- **Extended Door-open Button**
- **Automatic Door Speed**
- **Hall Light Switch Off — Automatic**
- **Continuity of Service**
- **Auto Door Canceling — Automatic**
- **False Call Canceling — Automatic**
- **High Accuracy Landing Feature**
- **Emergency Landing Device**
- **Independent Service**
- **Motor Drive Mode**
- **Non-service to Specific Floors — Car Button Type**
- **Out-of-service by Hall Key Switch**
- **Out-of-service remote**
- **Overload Holding Stop**
- **Return Operation**
- **Safe Landing**
- **Secret Call Service — Car Light Shut Off — Car Fan Shut Off — Control Microprocessor**

### EMERGENCY OPERATIONS AND FEATURES

- **Earthquake Emergency Return**
- **Emergency Car Lighting**
- **Fire Emergency Return**
- **Firefighters’ Emergency Operation**
- **Multiple Hallway Elevators & Monitors and Control System**

### OPERATIONAL AND SERVICE FEATURES

- **Attendant Service**
- **Automatic Bypass**
- **Automatic Hall Call Registration**

### Group Control Features

- **Bank Separation Operation**
- **Car Allocation Tuning**
- **Car Travel Time Evaluation**
- **Close-off Priority Service**
- **Congested-floor Service**
- **Cooperative Optimization Assignment**
- **Destination Oriented Allocation System**

### Feature Description

- **Back-up Operation for Group Control System**
- **Car Call Canceling**
- **Car for Short Off — Automatic**
- **Continuity of Service**
- **Auto Door Canceling — Automatic**
- **False Call Canceling — Automatic**
- **High Accuracy Landing Feature**
- **Emergency Landing Device**
- **Independent Service**
- **Motor Drive Mode**
- **Non-service to Specific Floors — Car Button Type**
- **Out-of-service by Hall Key Switch**
- **Out-of-service remote**
- **Overload Holding Stop**
- **Return Operation**
- **Safe Landing**
- **Secret Call Service**

### Notes

1. 1C to 2C
2. 2BC
3. ΣAI-22 (3- to 4-car group control system) - Optional, ΣAI-2200C (3- to 8-car group control system) - Optional
4. #1: Please consult our local agents for the production terms, etc.
5. #2: When the DOAS is applied, FCC-P
6. ΣAl-22: Please refer to the ΣAI-2200C brochure for those features.
7. #3: Optional when the system operation is 1C-2C.
### Features (2/2)

#### SIGNAL AND DISPLAY FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Car Operating Panel</td>
<td>ACS</td>
<td>An additional car control panel which can be installed for large-capacity elevators, heavy-traffic elevators, etc.</td>
</tr>
<tr>
<td>Basic Announcement</td>
<td>AAN-B</td>
<td>A synthesized voice and buzzer alerts passengers inside a car that elevator operation has been temporarily interrupted by overloading or a similar cause (available in 46 languages).</td>
</tr>
<tr>
<td>Car Arrival Chime</td>
<td>AEC (car)</td>
<td>Electronic chimes sound to indicate that a car will soon arrive. (The chimes are turned on and off by pressing the overlay button of the car or in each hall.)</td>
</tr>
<tr>
<td>Car Information Display</td>
<td>CID</td>
<td>This LCD (104 or 15-inch) for car front return panels shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.</td>
</tr>
<tr>
<td>Car LED Position Indicator</td>
<td>CID-S</td>
<td>This 5.7-inch LCD for car operating panels shows the date and time, car position, travel direction and elevator status messages.</td>
</tr>
<tr>
<td>Flashing Hall Lantern</td>
<td>FHL</td>
<td>A half-lantern, which corresponds to a car's service direction, flashes to indicate that the car will soon arrive.</td>
</tr>
<tr>
<td>Hall Information Display</td>
<td>HID</td>
<td>This LCD (104 or 15-inch) for elevator halls shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.</td>
</tr>
<tr>
<td>Hall LED Position Indicator</td>
<td>HID-S</td>
<td>This 5.7-inch LCD for elevator halls shows the date and time, car position, travel direction and elevator status messages.</td>
</tr>
<tr>
<td>Immediate Prediction Indication</td>
<td>AIL</td>
<td>When a passenger has registered a hall call, the car to respond to that call is immediately selected; the corresponding hall lantern lights up and a chime sounds once to indicate which doors will open.</td>
</tr>
<tr>
<td>Intercommunication System</td>
<td>TTP</td>
<td>A system which allows communication between passengers inside a car and the building personnel.</td>
</tr>
<tr>
<td>Second Car Prediction</td>
<td>TCP</td>
<td>When a hall is needed to the extent that one car cannot accommodate all waiting passengers, the half-lantern of the next car to serve the hall is lighted.</td>
</tr>
<tr>
<td>Sonic Car Button — 3.5-kHz Type</td>
<td>ACR</td>
<td>A click-type car button which emits electronic beep sounds when pressed to indicate that the call has been registered.</td>
</tr>
<tr>
<td>Voice Guidance System</td>
<td>AAN-G</td>
<td>Information on elevator service such as the current floor or service direction is given to the passengers inside a car.</td>
</tr>
</tbody>
</table>

Notes: 1C-2C (1-car selectivity control) — 2C-2RC (2-car group control system) — Optional 2A-12 (2 to 4-car group control system) — Optional 2A-20/20C (5 to 6-car group control system) — Optional

### GROUP CONTROL FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinction of Traffic Flow with Neural Networks</td>
<td>NN</td>
<td>Traffic flows in shifting are constantly monitored using neural network technology, and the optimum operational pattern for the lift, UPS feature, etc. is selected or canceled accordingly at the appropriate time.</td>
</tr>
<tr>
<td>Door Peak Service</td>
<td>DPS</td>
<td>Controls the number of cars to be allocated and the timing of car allocation in order to meet increased demands for downward travel during office leaving time, hotel checkout time, etc. to minimize passenger waiting time.</td>
</tr>
<tr>
<td>Dynamic Rule-set Optimizer</td>
<td>DRO</td>
<td>Traffic flows in shifting are constantly predicted using neural network technology, and an optimum rule-set for group control operations is selected through real-time simulations based on prediction results.</td>
</tr>
<tr>
<td>Energy-saving Operation — Allocation Control</td>
<td>ES-O-W</td>
<td>The system selects the elevator that balances operational efficiency and energy consumption according to each elevator's current location and passenger load as well as predicted passenger load throughout the day.</td>
</tr>
<tr>
<td>Energy-saving Operation — Power Reduction during Elevator Stop</td>
<td>ES-O-A</td>
<td>To save energy, some elevators are automatically shut down in sleep mode if there are no calls for a specified period.</td>
</tr>
<tr>
<td>Expert System and Fuzzy Logic</td>
<td>—</td>
<td>Artificial expert knowledge, which has been programmed using “expert system” and “fuzzy logic”, is applied to select the ideal operational rule which maximizes the efficiency of group control operations.</td>
</tr>
<tr>
<td>Forced Floor Stop</td>
<td>FFS</td>
<td>All cars in a bank automatically make a stop at a predetermined floor on every trip without being called.</td>
</tr>
<tr>
<td>Intensify Up-Peak</td>
<td>JLP</td>
<td>To maximize transport efficiency, activator bank is divided into two groups of cars to serve upper and lower floors separately during up peak. In addition, the number of cars to be allocated, the timing of car allocation to the lobby floor, the timing of door closing, etc. are controlled based on predicted traffic data.</td>
</tr>
<tr>
<td>Light-load Car Priority Service</td>
<td>UCPS</td>
<td>When traffic is light, empty or lightly loaded cars are given higher priority to respond to hall calls in order to minimize passenger travel time. (Cannot be combined with hall position indicators.)</td>
</tr>
<tr>
<td>Lunchtime Service</td>
<td>LTS</td>
<td>During the first half of lunchtime, calls for a restaurant floor are served with higher priority, and during the latter half, the number of cars allocated to the restaurant floor, the allocation timing for each car and the door opening and closing timing are all controlled based on predicted data.</td>
</tr>
<tr>
<td>Main Floor Changes in Operation</td>
<td>TFS</td>
<td>The feature is effective for buildings with two main lobby/floors. The floor designated as the &quot;main floor&quot; in a group control operation can be changed as necessary using a manual switch.</td>
</tr>
<tr>
<td>Main Floor Parking</td>
<td>MFP</td>
<td>An available car always parks on the main (lobby) floor with the doors open.</td>
</tr>
<tr>
<td>Peak Traffic Control</td>
<td>PTC</td>
<td>A floor which temporarily has the heaviest traffic is served with higher priority over other floors, but not to the extent that it interferes with the service to other floors.</td>
</tr>
<tr>
<td>Psychological Waiting Time Evaluation</td>
<td>—</td>
<td>Cars are allocated according to the predicted psychological waiting time for each hall (call). The rules evaluating psychological waiting time are automatically changed to a timely manner in response to actual service conditions.</td>
</tr>
<tr>
<td>Special Car Priority Service</td>
<td>SCP</td>
<td>Special cars, such as observation elevators and elevators with basement service, are given higher priority to respond to hall calls. (Cannot be combined with hall position indicators.)</td>
</tr>
<tr>
<td>Special Floor Priority Service</td>
<td>SPF</td>
<td>Special floors, such as floors with VIP rooms or executive rooms, are given higher priority for car allocation when a call is made on those floors. (Cannot be combined with hall position indicators.)</td>
</tr>
<tr>
<td>Strategic Overall Spottings</td>
<td>SOHS</td>
<td>To reduce passenger waiting time, cars which have finished service are automatically directed to positions where they can respond to predicted hall calls as quickly as possible.</td>
</tr>
<tr>
<td>Up Peak Service</td>
<td>UPS</td>
<td>Controls the number of cars to be allocated to the lobby floor, as well as the car allocation timing, in order to meet increased demands for upward travel from the lobby floor during office starting time, hotel checkout time, etc., and minimize passenger waiting time.</td>
</tr>
<tr>
<td>VIP Operation</td>
<td>VIP-S</td>
<td>A specified car is withdrawn from group control operation for VIP service operation. When activated, the car responds only to existing car calls, moves to a specified floor and parks there with the doors open. The car then responds only to car calls.</td>
</tr>
</tbody>
</table>

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Features (2/2)
Specifications

<table>
<thead>
<tr>
<th>Capacity and Speed</th>
<th>Number of persons</th>
<th>Rated speed (m/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated capacity (kg)</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>750</td>
<td>10</td>
<td>●</td>
</tr>
<tr>
<td>900</td>
<td>12</td>
<td>●</td>
</tr>
<tr>
<td>1050</td>
<td>14</td>
<td>●</td>
</tr>
<tr>
<td>1200</td>
<td>16</td>
<td>●</td>
</tr>
<tr>
<td>1350</td>
<td>18</td>
<td>●</td>
</tr>
<tr>
<td>1600</td>
<td>21</td>
<td>●</td>
</tr>
<tr>
<td>1800</td>
<td>24</td>
<td>●</td>
</tr>
<tr>
<td>2000</td>
<td>26</td>
<td>●</td>
</tr>
<tr>
<td>2250</td>
<td>30</td>
<td>○</td>
</tr>
<tr>
<td>2500</td>
<td>33</td>
<td>○</td>
</tr>
<tr>
<td>3000</td>
<td>40</td>
<td>○</td>
</tr>
</tbody>
</table>

Notes:
*1: The symbol ○ shown in the table indicates that a technical inquiry is required depending on conditions.
*2: The symbol ● shown in the table indicates that a technical inquiry is required.

Important Information on Elevator Planning

Work Not Included in Elevator Contract

The following items are excluded from Mitsubishi Electric’s elevator installation work. Their details or conditions are to be conform to the statement of EN81-20/50: 2014, local laws or Mitsubishi Electric elevator’s requirements, are therefore the responsibility of the building owner or general contractor:
- Construction of the elevator machine room with proper beams and slabs, equipped with a lock, complete with illumination, ventilation and waterproofing.
- Access to the elevator machine room sufficient to allow passage of the control panel and traction machine.
- Architectural finishing of the machine-room floor, and walls and floors in the vicinity of the entrance hall after installation has been completed.
- Construction of an illuminated, ventilated and waterproofed hoistway.
- The provision of openings and supporting members as required for equipment installation.
- Separate beams, when the hoistway dimensions markedly exceed the specifications, intermediate beams and separator partitions when two or more elevators are installed.
- The provision of an emergency exit door, inspection door and pit access door, when required, and access to the doors.
- All other work related to building construction.
- The provision of the main power and power for illumination, and their electrical switch boxes in the machine room, and laying of the wiring from the electrical room.
- The provision of outlets and laying of the wiring in the machine room and the hoistway, plus the power from the electrical switch box.
- The laying of conduits and wiring between the elevator pit and the terminating point for the devices installed outside the hoistway, such as the emergency bell, intercom, monitoring and security devices.
- The power consumed in installation work and test operations.
- All the necessary building materials for grouting in of brackets, bolts, etc.
- The test provision and subsequent alteration as required, and eventual removal of the scaffolding as required by the elevator contractor, and any other protection of the work as may be required during the process.
- The provision of a suitable, locked space for the storage of elevator equipment and tools during elevator installation.
- The security system, such as a card reader, connected to Mitsubishi Electric’s elevator controller, when supplied by the building owner or general contractor.

Note: Work responsibilities in installation and construction shall be determined according to local laws.

Elevator Site Requirements

- The temperature of the machine room and elevator hoistway shall be below 40°C.
- The following conditions are required for maintaining elevator performance:
  a. The relative humidity shall be below 90% on a monthly average and below 95% on a daily average.
  b. Prevention against icing and condensation occurring due to a rapid drop in the temperature shall be provided in the machine room and elevator hoistway.
  c. The machine room and the elevator hoistway shall be finished with mortar or other materials so as to prevent concrete dust.
- Voltage fluctuation shall be within a range of +5% to –10%.

Ordering Information

Please include the following information when ordering or requesting estimates:
- The desired number of units, speed and loading capacity.
- The number of stops or number of floors to be served.
- The total elevator travel and each floor-to-floor height.
- Operation system.
- Selected design and size of car.
- Entrance design.
- Signal equipment.
- A sketch of the part of the building where the elevators are to be installed.
- The voltage, number of phases, and frequency of the power source for the motor and lighting.
State-of-the-Art Factories…
For the Environment. For Product Quality.

Mitsubishi Electric elevators and escalators are currently operating in approximately 90 countries around the globe. Built placing priority on safety first, our elevators, escalators and building system products are renowned for their excellent efficiency, energy savings and comfort. The technologies and skills cultivated at the Inazawa Works and 13 overseas manufacturing factories are utilized in a global network that provides sales, installation and maintenance in support of maintaining and improving product quality. As a means of contributing to the realization of a sustainable society, we consciously consider the environment in business operations, proactively work to realize a low-carbon, recycling-based society, and promote the preservation of biodiversity.

ISO9001/14001 certification

Mitsubishi Electric Corporation Inazawa Works has acquired ISO 9001 certification from the International Organization for Standardization based on a review of quality management. The plant has also acquired environmental management system standard ISO 14001 certification.

<table>
<thead>
<tr>
<th>ISO 9001</th>
<th>BUREAU VERITAS Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 14001</td>
<td>UKAS Certification</td>
</tr>
</tbody>
</table>

Eco Changes is the Mitsubishi Electric Group’s environmental statement, and expresses the Group’s stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION
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