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.
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.

We strive to be green in all of our business activities. We take every action to reduce environmental burden during each process of our elevators’ and escalators’ lifecycle.

Mitsubishi Electric elevators, escalators and building management systems are always evolving, helping achieve our goal of being the No.1 brand in quality. 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 environmental technologies to offer its customers safe and reliable products while contributing to society.

Contents

- Speed/Comfort 7 - 8
- Ecology/Safety 9 - 10
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- Ceiling Designs/Car Operating Panels 15 - 30
- Hall Signal Fixtures/Button Line-up/Interior/Hall Designs 31 - 32
- Materials and Colors 33 - 36
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- Important Information on Elevator Planning 38
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.

Super High-rise Rope Mechanics
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.

Traction Machine with PM Motor
(PM motor: permanent magnet motor)
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.

Speed

Comfort

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.
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>Year</th>
<th>Motor</th>
<th>Traction machine</th>
<th>Motor drive</th>
<th>Control circuit</th>
<th>Power consumption</th>
<th>CO₂ emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>DC motor</td>
<td>Gearless</td>
<td>Ward-Leonard</td>
<td>Relay</td>
<td>100%</td>
<td>54%</td>
</tr>
<tr>
<td>1980</td>
<td>Induction motor</td>
<td>Gearless</td>
<td>Thyristor</td>
<td>Micro-computer</td>
<td>95%</td>
<td>57%</td>
</tr>
<tr>
<td>1990</td>
<td>Induction motor</td>
<td>Gearless</td>
<td>Thyristor</td>
<td>Micro-computer</td>
<td>95%</td>
<td>57%</td>
</tr>
<tr>
<td>2000</td>
<td>Permanent magnet motor</td>
<td>Gearless</td>
<td>Thyristor</td>
<td>Micro-computer</td>
<td>62%</td>
<td>53%</td>
</tr>
<tr>
<td>2010</td>
<td>Permanent magnet motor</td>
<td>Gearless</td>
<td>Thyristor</td>
<td>Micro-computer</td>
<td>72%</td>
<td>53%</td>
</tr>
</tbody>
</table>

Advantages of LEDs

- Ceiling: L210S
- LED downlights (yellow-orange)

<table>
<thead>
<tr>
<th>Service life (hr)</th>
<th>Power consumption (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>25000</td>
</tr>
<tr>
<td>Incandescent lamp</td>
<td>2000</td>
</tr>
<tr>
<td>LED</td>
<td>32.5</td>
</tr>
<tr>
<td>Incandescent lamp</td>
<td>132</td>
</tr>
</tbody>
</table>

Approximately 12.5 times longer
Approximately 75% reduction

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.

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 33 for details.)

Power failure

- Mitsubishi Emergency Landing Device (MELD) (Optional)
  - Upon power failure, the car automatically moves to the nearest floor using a rechargeable battery to facilitate the safe evacuation of passengers.

Fire

- Operation by Emergency Power Source — Automatic/Manual (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 Emergency Return (FER) (Optional)
  - When the fire operation switch is activated, the car immediately returns to a specified floor and opens 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.
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.)

Example of hall arrangement

Efficiency

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

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

Performance

![Graph showing Efficiency](image)

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.

Advantages of DOAS at Hall

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.

Please refer to the ΣAI-2200C brochure for details.
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.

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

**Customized-1**
Distinctive design using vaulted lighting and marble floor finish

- **Walls**
  - Colored (bronze) SUS-HE
- **Transom panel**
  - SUS-M
- **Doors**
  - Colored (bronze) SUS-HE
- **Front return panels**
  - SUS-M
- **Kickplate**
  - SUS-HL
- **Flooring**
  - Marble (supplied by customer)
- **Car operating panel**
  - CBV3-D750 (faceplate: SUS-M)
- **Handrails**
  - YH-59M
- **Mirrors**
  - YZ-55SN

**Car Design Example**

Ceiling: Painted steel sheet (Y033)
Lighting: Central indirect lighting and downlights

**Customized-2**
Indirect center lighting and downlights create a relaxing atmosphere

- **Walls**
  - Painted steel sheet
- **Transom panel**
  - Painted steel sheet
- **Doors**
  - Painted steel sheet
- **Front return panels**
  - SUS-HL
- **Kickplate**
  - SUS-HL
- **Flooring**
  - Marble (supplied by customer)
- **Car operating panel**
  - CBN4-C710
- **Handrails**
  - YH-59M
- **Mirror**
  - YZ-52A

**Car Design Example**

Ceiling: Painted steel sheet (Y033)
Lighting: Central indirect lighting and downlights

Actual colors may differ slightly from those shown.
Please refer to page 20 for the explanations of SUS-HL, colored SUS-HE and SUS-M.
Ceiling Designs

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

- **Walls**: Pattern-printed steel sheet (CP111)
- **Transom panel**: Pattern-printed steel sheet (CP111)
- **Doors**: Pattern-printed steel sheet (CP101)
- **Front return panels**: SUS-HL
- **Kickplate**: SUS-HL
- **Flooring**: Durable vinyl tiles
- **Car operating panel**: CBV3-N730
- **Handrails**: YH-59S

**Car Design Example**

**N300**  Terraced design with illusion of increased ceiling height

- **Walls**: Colored (gold) SUS-HL
- **Transom panel**: Colored (gold) SUS-HL
- **Doors**: SUS-M
- **Front return panels**: SUS-M
- **Kickplate**: Colored (gold) SUS-HL
- **Flooring**: Durable rubber tiles
- **Car operating panel**: CBV1-C730 (faceplate: SUS-M)
- **Handrails**: YH-59M

**Car Design Example**

- **Ceiling**: Painted steel sheet (Y033)
- **Lighting**: Downlights (LEDs)

- **Ceiling**: Painted steel sheet (Y033)
- **Lighting**: Central indirect lighting and downlights

Actual colors may differ slightly from those shown. Please refer to page 20 for the explanations of SUS-HL, colored SUS-HL, and SUS-M.
Ceiling Designs

N130 | Light transmitted through exotic ceiling patterns

Car Design Example

- Walls: Colored (bronze) SUS-HE (EPA-2)
- Transom panel: Colored (bronze) SUS-HE (EPA-2)
- Doors: Colored (bronze) SUS-HE (EPA-2)
- Front return panels: SUS-HL
- Kickplate: Colored (bronze) SUS-HL
- Flooring: Durable rubber tiles
- Car operating panel: CBV1-N710 (faceplate: SUS-M)
- Mirror: YZ-53A
- Handrails: YH-59M

N120 | Gorgeous ceiling with lustrous translucent panels fused using refined geometric patterns

Car Finish Example

- Walls: SUS-HE (EPA-3)
- Transom panel: SUS-HE (EPA-3)
- Doors: SUS-HE (EPA-3)
- Front return panels: SUS-M
- Kickplate: SUS-HL
- Flooring: Durable rubber tiles
- Car operating panel: CBV5-N710
- Handrails: YH-59M

Car Finishes

Please refer to pages 31 and 32 for materials and colors.

Materials/Finishes

| Stainless steel, hairline finish with etched pattern*1 (SUS-HE) | Optional | Optional | Optional | Optional | Optional |
| Pattern-printed steel sheet | Optional | Optional | Optional | Optional | Optional |
| Stainless steel, mirror finish (SUS-M) | Optional | Optional | Optional | Optional | Optional |
| Colored stainless-steel, hairline finish with etched pattern*2 (colored SUS-HE) | Optional | Optional | Optional | Optional | Optional |
| Colored stainless-steel, mirror finish with etched pattern*2 (colored SUS-HE) | Optional | Optional | Optional | Optional | Optional |
| Colored stainless-steel, mirror finish (colored SUS-HL) | Optional | Optional | Optional | Optional | Optional |
| Aluminum | Standard | Standard | Standard | Standard | Optional |
| Glass windows | Optional | Optional | Optional | Optional | Optional |
| See-through doors | Optional | Optional | Optional | Optional | Optional |
| Stainless steel | Optional | Optional | Optional | Optional | Optional |

Note:

*1 Etching pattern EPA-1 to 6 only.
*2 Etching pattern EPA-1 to 3 only.
*3 Only available in dark gray.

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

For front return panel

Notes:
*1: Segment LED indicators cannot display some letters of alphabet. Please consult our local agents for details.
*2: Please select a button type referring to page 27, and enter the number in the space shown as ˙.
*3: Faceplates with stainless-steel, mirror-/finish are also available (optional). Please consult our local agents for details.
*4: Maximum number of floors: 22 floors.
*5: The types in parentheses ( ) show auxiliary car operating panels (optional). The design is slightly different from the above images.
*6: Please consult our local agents for further information such as installation location.

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

For side wall

Segment LED indicator

Dot LED indicator

Dot LED indicator only

CBV-N710 *2, 3
(CBV-N716) *2, 3, 4

CBV-N712 *2, 3
(with alarm indication and tactile buttons for EN81-70)
(CBV-N717) *2, 3, 4, 5

CBH-N215

8
25
Flat buttons (plastic)

CBV-N228
Keypad type

CBVF-N228
(with alarm indication and buttons for EN81-70)
Keypad type

Notes:

*1: Segment LED indicators cannot display some letters of alphabet. Please consult our local agents for details.

*2: Please select a button type referring to page 27, and enter the number in the space shown as .

*3: Faceplates with stainless-steel mirror finish are also available (optional). Please consult our local agents for details.

*4: 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.

*5: 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

- **Metal-like resin faceplates**
  - Segment LED indicator
  - Dot LED indicator

- **LCD indicator**

- **Hall buttons**
  - Metal-like resin faceplate
  - Segment LED indicator
  - Dot LED indicator

- **No-entry indicators for EN81-73**
  - HBV
  - HBV
  - SN-C10

---

### Hall lanterns

- **Hall position indicators**
  - LED indicators

- **LCD position indicator**
  - LED indicator

- **LCD information displays**
  - LED indicator

- **Hall position indicator with lantern**
  - LED indicators

---

**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.

**Notes:**

1. Segment LED indicators cannot display some letters of alphabet. Please consult our local agents for details.
2. Dot LED indicators are also available (optional). Please consult our local agents for details.
3. Please select a button type referring to page 25 and enter the number in the space shown.
4. Faceplates with stainless-steel/mirror finish are also available (optional). Please consult our local agents for details.
5. For EN81-70 compliant elevators, please select a tactile button type referring to page 27.
6. These types with tactile buttons are applicable to EN81-70 compliant elevators only in 1C-2BC where one car is controlled independently.
Button Line-up

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

Square buttons
The entire buttons (excluding characters) are illuminated yellow-orange, white or blue.

Note:
* Flat buttons are not applicable to regulation EN81-70.

Interior

Mirrors
YZ-52A
Half-size
YZ-53A
Two-mirror set
YZ-55SN
Full height

Handrails

YZ-52A
YZ-53A
YZ-55SN
YZ-59S (SUS-HL)
YZ-59M (SUS-M)
YZ-59G (SUS-M)
YZ-57S (SUS-HL)

Actual colors may differ slightly from those shown.
Please refer to page 20 for the explanations of SUS-HL and SUS-M.
Hall Designs

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

Hall Design Example of E-312

- Jamb: SUS-HL
- Transom panel: Colored (black) SUS-HE
- Doors: Colored (black) SUS-HE
- Hall lantern: HLV-E71
- Hall button: HBV3-C710N

Hall Design Example of E-302

- Jamb: SUS-HL
- Doors: Painted steel sheet (Y033)
- Hall lantern: HLV-E66
- Hall button: HBV1-C710N

Hall Design Example of E-312

- Jamb: SUS-HL
- Transom panel: Colored (black) SUS-HE
- Doors: Colored (black) SUS-HE
- Hall lantern: HLV-E71
- Hall button: HBV3-C710N

Entrance Finishes

Please refer to pages 31 and 32 for materials and colors.

<table>
<thead>
<tr>
<th>Materials/Finishes</th>
<th>Jamb</th>
<th>Transom panel</th>
<th>Doors</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel, hairline-finish</td>
<td>Standard</td>
<td>Optional</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Painted sheet</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Stainless steel, hairline-finish</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Glass windows (1030×2000×1030)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Standard</td>
</tr>
<tr>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
<td>Optional</td>
</tr>
</tbody>
</table>

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

[Car] Walls, doors and transom panel

Colored stainless-steel, hairline-finish

- Gold
- Bronze

Pattern-printed steel sheet

- CP23
- CP101
- CP111
- CP121
- CP141

Etching patterns (gold or bronze)

- EPA-1
- EPA-2
- EPA-3

Non-etched surface

- Etched surface

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

Painted steel sheet

- (210, N300, customized-1, customized-2 only)

Stainless-steel

- EPA-1
- EPA-2
- EPA-3
- EPA-4
- EPA-5
- EPA-6

Hairline-finish

- Non-etched surface

Etching patterns (stainless-steel)

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

Painted finish

- Y002
- Y004
- Y006
- Y014
- Y016
- Y033
- Y051
- Y054
- Y055
- Y071
- Y116

[Hall] Doors, transom panel and jamb

Flooring

- Durable vinyl tiles

- PR801
- PR803
- PR810
- PR812

Etching patterns (gold or bronze)

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

[Hall] Doors, transom panel


Etching patterns (stainless-steel)

*Not applicable to the jamb; please refer to the etching finish pattern book, EFA1, for details.

Painted finish

- Y002
- Y004
- Y006
- Y014
- Y016
- Y033
- Y051
- Y054
- Y055
- Y071
- Y116

Etching patterns (stainless-steel)

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

Painted finish

- Y002
- Y004
- Y006
- Y014
- Y016
- Y033
- Y051
- Y054
- Y055
- Y071
- Y116
Features (1/2)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door Sensor (DS)</td>
<td>Failure of non-contact door sensors is checked automatically, and if a problem is diagnosed, the door-closing time is delayed and the closing speed is reduced to maintain elevator service and ensure passenger safety.</td>
</tr>
<tr>
<td>Automatic Door Speed Control (ADS)</td>
<td>Door load on all floors, which can depend on the type of hall doors, is monitored to adjust the door speed, thereby making the door-closing speed consistent throughout all floors.</td>
</tr>
<tr>
<td>Automatic Door Open Time Adjustment (DOT)</td>
<td>The time the doors are open is automatically adjusted depending on whether the stoppage was caused by the car or the door, to allow smooth boarding of customers or loading of baggage.</td>
</tr>
<tr>
<td>Reopen with Hall Button (RHB)</td>
<td>Reopen doors can be closed by pressing the hall button corresponding to the traveling direction of the car.</td>
</tr>
<tr>
<td>Repeated Door-close (RDC)</td>
<td>Should an alarm be ignored, the doors are then stopped and the car returns to the previous floor.</td>
</tr>
<tr>
<td>Door Nudging Feature — With Buzzer (DNB)</td>
<td>A buzzer sounds if the doors are closed close to the threshold of minimum opening for longer than the specified period.</td>
</tr>
<tr>
<td>Door Load Detector (DLD)</td>
<td>When excessive door load is detected while opening or closing, the doors are automatically stopped.</td>
</tr>
<tr>
<td>Safety Edge Gate (SEG)</td>
<td>Sensing door edges detect passengers or objects during door-closing.</td>
</tr>
<tr>
<td>Safety Eyebrow (SEB)</td>
<td>The car roofing and the door will reverse automatically if the safety rays are obstructed by objects or passengers.</td>
</tr>
<tr>
<td>Extended-height Door (EHD)</td>
<td>When the buttons inside a car is pressed, the doors remain open for longer to allow loading and unloading of baggage, a stretcher, etc.</td>
</tr>
<tr>
<td>Electronic Doorman (EDM)</td>
<td>The time for opening a new car is minimized using the Safety Eyebrow (SEB) on multi-door Door Sensor feature that detects passenger boarding or exiting.</td>
</tr>
<tr>
<td>Multi-door Door Sensor</td>
<td>Multiple infrared-light beams cover some 1,800 mm in height of the doors to detect passengers or objects as the doors close. (Cannot be combined with the SEB feature.)</td>
</tr>
<tr>
<td>First bottom sensor (FBS)</td>
<td>Infrared light is used to scan a 3D area near the open doors to detect passengers or objects.</td>
</tr>
</tbody>
</table>

## OPERATIONAL AND SERVICE FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe Landing (SL)</td>
<td>If a car has stopped between floors due to equipment malfunction, the controller checks the car, and if it is safe, it moves to the nearest floor at a low speed and the doors open.</td>
</tr>
<tr>
<td>Steel Landing (SL)</td>
<td>If the car has stopped between floors, the car automatically moves to the nearest floor where the doors open.</td>
</tr>
<tr>
<td>Continuity of Service (CO)</td>
<td>A car which is experiencing trouble is automatically withdrawn from group control operation to maintain overall group performance.</td>
</tr>
</tbody>
</table>

## GROUP CONTROL FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out-of-service — Remote (MCS)</td>
<td>With any switch on the supervisory panel, a car can be called to a specified floor only after receiving all calls, and then automatically taken out of service.</td>
</tr>
<tr>
<td>Non-service to Specific Floors — Multi-door Type (NSM-D)</td>
<td>To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.</td>
</tr>
<tr>
<td>Non-service to Specific Floors — Multi-door Type (NSM-D)</td>
<td>To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.</td>
</tr>
<tr>
<td>Non-service to Specific Floors — Multi-door Type (NSM-D)</td>
<td>To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.</td>
</tr>
<tr>
<td>Out-of-service — Remote (MCS)</td>
<td>Using a key on the supervisory panel, etc., a car can be withdrawn from group control operation and called to a specified floor. The car will park on that floor with the doors open and not accept any calls until independent operations begin.</td>
</tr>
<tr>
<td>Non-service to Specific Floors — Multi-door Type (NSM-D)</td>
<td>For maintenance or energy-saving measures, a car can be taken out of service temporarily with a switch on the supervisory panel, etc., and the car will not leave that floor until enough passengers exit the car.</td>
</tr>
</tbody>
</table>

Notes:
1. 1C-2BC (1-car selective collective) - Standard, 2C-2BC (2-car group control system) - Optional
2. ΣAI-22 (3 to 4-car group control system) - Optional, ΣAI-2200C (3 to 8-car group control system) - Optional
3. Options are selected or canceled accordingly at the appropriate time.
4. The car landing level is automatically adjusted to a height of 3 feet from any condition.
5. A floor which temporarily has the heaviest traffic is served with higher priority over other floors.
6. A buzzer sounds to alert the passengers that the car is overloaded. The doors remain open and the car will not leave that floor until enough passengers exit the car.
7. If a car is operated in the automatic mode, the system regards remaining calls in the other direction as mistakes and clears them from the memory.
8. When the DOAS is applied, the Safety Eyebrow (SEB) or Multi-door Door Sensor feature should be installed.
9. Automatic Bypass (ABP) is a fully loaded or bypassed car to order maximum military operational efficiency. (Optional feature when the operation system is 1C-2BC.)
10. The car landing level is adjusted to a high level of precision to ensure a landing accuracy of a few millimeters under any conditions.
11. Each elevator's status and operation can be remotely monitored and controlled through a web-based technology which provides an interface through personal computers. Special optional features such as monitoring of traffic statistics and analytics are also available.
12. Overload Holding Stop (OLH) feature, is selected or canceled accordingly at the appropriate time.
### Psychological Waiting Time Evaluation
- Cars are allocated according to the predicted psychological waiting time for each hall call. The rules evaluating psychological waiting time are automatically changed in a timely manner in response to actual service conditions.

### Strategic Overall Splitting (SOS)
- 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. It dynamically adjusts the number of cars serving each floor to meet the demand.

### Main Floor Changeover Operation (BSO-W)
- This feature selects the elevator that best balances operational efficiency and energy consumption according to each elevator’s current location and passenger load as well as predicted congestion levels throughout the day.

### Energy-saving Operation - Allocation Control (BSO-A)
- To save energy, some elevators are automatically put into sleep mode if there are no calls for a specified period.

### Energy-saving Operation - Power Reduction during Off-peak (BSO-O)
- To save energy, the car speed is automatically reduced to some extent, but not so much that it adversely affects passenger waiting time.

### Communication Elevator Control System (DOAS)
- When a passenger enters a destination floor at a hall, the hall operating panel indicates which car will serve the floor. The passenger does not need to press a button in the car. Operating passengers by destination prevents congestion in the cars and minimizes waiting and traveling time. (Cannot be combined with some features.)

### Intense-Up Peak (IUP)
- To maximize transport efficiency, an elevator 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.

### Up Peak Service (UPS)
- 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 during office leaving time, hotel check-out time, etc., to minimize passenger waiting time.

### Down Peak Service (DPS)
- 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 check-in time, etc., to minimize passenger waiting time.

### Klein Floor Parking (KFP)
- An available car always parks on the main (lobby) floor with the doors open for a specified period in china.

### Forward Floor Stop (FFS)
- All cars in a bank automatically make a stop at a predetermined floor on every trip without waiting being called.

### Special Floor Priority Service (SPS)
- Special floors, such as those 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.)

### Closed-circuit Priority Service (CCPS)
- A function to give priority allocation to the closed floor to which the hall call button has been pressed, or to reverse the closing doors of the car closest to the resolved hall call button on that floor. (Cannot be combined with hall position indicators.)

### Light-load Car Priority Service (LLPS)
- 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.)

### Special Car Priority Service (SCPS)
- Special cars, such as observation elevators and elevators with basement service, are given higher priority to respond to such calls. (Cannot be combined with hall position indicators.)

### Computed-floors Service (CFS)
- The timing of car allocation and the number of cars allocated to floors where heavy traffic is expected or the traffic intensity for short periods of time are controlled according to the detected traffic data for those floors.

### Bank-separation Operation (BGO)
- Hall buttons and the cars called by each button can be divided into several groups for independent group control operation to serve special needs or different floors.

### VIP Operation (VIP-L)
- 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.

### Lunchtime Service (LS)
- 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 is increased in order to respond to restaurant floor calls. (Cannot be combined with hall position indicators.)

### Main Floor Changeover Operation (FPO)
- This feature is effective for buildings with two main (lobby) floors. The floor designated as the “main floor” in a group control operation can be changed as necessary using a manual switch.

### Features (2/2)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Arrival Chime</td>
<td>Car (ACH) Hall (AHC)</td>
</tr>
<tr>
<td>Flashing Hall Lanterns (FHL)</td>
<td>A flickering lantern which corresponds to a car’s service direction, flashes to indicate that the car will soon arrive.</td>
</tr>
<tr>
<td>Car Alarm Chime</td>
<td>Electronic chimes sound to indicate that a car will soon arrive. (The chimes are mounted either on the top and bottom of the car, or in each hall.)</td>
</tr>
<tr>
<td>Sonic Car Button — Click Type (CB)</td>
<td>A click-type car button which emits electronic beep sound when pressed to indicate that the door is closing</td>
</tr>
<tr>
<td>Immediate Prediction Indication (API)</td>
<td>When a passenger has registered a hall call, the best candidate 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>Second Car Prediction (TCP)</td>
<td>When a passenger enters a destination floor at a hall, the hall operating panel indicates which car will serve the floor. If the doors of the car closest to the pressed hall call button have been temporarily interrupted by overloading or a similar cause. (Voice available only in English.)</td>
</tr>
<tr>
<td>Voice Guidance System (AVS)</td>
<td>A system for voice announcement, etc., to minimize passenger waiting time.</td>
</tr>
<tr>
<td>Auxiliary Car Operating Panel (ACP)</td>
<td>An additional car control panel which can be installed for large-capacity elevators, busy traffic elevators, etc.</td>
</tr>
<tr>
<td>Intercommunication System (ITP)</td>
<td>A system which allows communication between passengers inside a car and the building personnel.</td>
</tr>
<tr>
<td>Car LCD Position Indicator (CDI-D)</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>Hall LCD Position Indicator (HD-D)</td>
<td>This LCD (10.4- or 15-inch) for car front return panels shows the date and time, car position, travel direction and elevator status messages.</td>
</tr>
<tr>
<td>Car Information Display (CID-D)</td>
<td>This LCD (10.4- or 15-inch) for car front return panels shows the date and time, car position, travel direction and elevator status messages. (In addition, custom video images can be displayed in full-screen or partial-screen formats.)</td>
</tr>
<tr>
<td>Hall Information Display (HID-D)</td>
<td>This LCD (10.4- or 15-inch) for elevator halls shows the date and time, car position, travel direction and elevator status messages. (In addition, custom video images can be displayed in full-screen or partial-screen formats.)</td>
</tr>
</tbody>
</table>

### Notes:
- 1: 1C-2B/C (1-car selectivity control) - Standard | 2C-2B/C (2-car group control system) - Optional
- Optional: 3A-LUZ (3 to 4-car group control system) - Optional | Sigma: 1A-2BOOC (1 to 8-car group control system) - Optional
- 2: When the DOAS is applied, the Safety Relay (SR) or Main door sensor feature should be installed. | The DOAS cannot be combined with some features. Please refer to the Sigma: 2BOOC brochure for those features.
Specifications

Capacity and Speed

<table>
<thead>
<tr>
<th>Rated capacity (kg)</th>
<th>Number of persons</th>
<th>Rated speed (m/sec)</th>
<th>Mitsubishi Electric standard</th>
<th>ENB1-1</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

Notes:
1. The symbol ✓ shown in the table indicates a technical inquiry is required.
2. The symbol * shown in the table indicates that a technical inquiry is required depending on conditions.
3. 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, and 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 the walls and floors in the vicinity of the entrance hall after installation has been completed.
- Construction of an illuminated, ventilated and waterproofed elevator hoistway.
- A ladder to the elevator pit.
- The provision of cutting the necessary openings and joints.
- Separate beams, when the hoistway dimensions markedly exceed the specifications, and intermediate beams when two or more elevators are installed.
- All other work related to building construction.
- The machine room power-receiving panel and the electrical wiring for illumination, plus the electrical wiring from the electrical room to the power-receiving panel.
- 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, etc.
- 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.

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 shall be provided against icing and condensation occurring due to a rapid drop in the temperature 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%.
- Please include the following information when ordering or requesting estimates:
  a. The desired number of units, speed and loading capacity.
  b. The number of stops or number of floors to be served.
  c. The total elevator travel and each floor-to-floor height.
  d. Operation system.
  e. Selected design and size of car.
  f. Entrance design.
  g. Signal equipment.
  h. A sketch of the part of the building where the elevators are to be installed.
  i. The voltage, number of phases, and frequency of the power source for the motor and lighting.

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.

Door System

- Standard 2-panel center opening (CO)
- Optional 2-panel side sliding (SS) or 4-panel center opening (SC)

Operation System

- Standard 1-car selective collective (1C-2BC)
- Optional 2-car group control system (2C-2BC), 3- or 4-car group control ZA-22 system, or 3- to 8-car group central ZA-2100C system.
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.

Visit our website at:
http://www.mitsubishielectric.com/elevator/

⚠️ Safety Tips: Be sure to read the instruction manual fully before using this product.