PASSENGER ELEVATORS
(HIGH-SPEED CUSTOM-TYPE)
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**

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 and environmental technologies to offer its customers safe and reliable products while contributing to society.

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- Specifications/Important Information on Elevator Planning

**Application**

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.
**Speed**

*Traction Machine with PM Motor*

(PermaMagnetic 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.

**Super High-rise Rope Mechanics**

Mitsubishi Electric’s new sfex-rope® is comprised of bundles of high-intensity steel wire strands, each covered with plastic, offering 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 sfex-rope® is a registered trademark of Mitsubishi Electric Corporation.

**Comfort**

*Active Roller Guide (Optional*)*

The amount of lateral vibration generated by high-speed elevator cars can be 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.

*Please consult our local agents for details.
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.

<table>
<thead>
<tr>
<th>Advantages of LEDs</th>
<th>Ceiling: L210S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service life (hr)</td>
<td>Approx. 12.5 times longer</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>Approx. 75% reduction</td>
</tr>
</tbody>
</table>

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

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.
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.

Example of hall arrangement

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

Forecasts a near-future hall call to reduce long waits
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.

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

Performance
- Average waiting time
- Long-wait rate (60 seconds or longer)

Improved: Max. 40%
Improved: Max. 80%

Cooperative Optimization Assignment (ΣAI-2200C)
Forecasts a near-future hall call to reduce long waits

Efficiency

Destination Oriented Allocation System: DOAS (Optional for ΣAI-2200C)
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.

- **Monitoring screens**
  MelEye’s user-friendly screen shows the detailed operational status of the elevators in real time.
- **Statistical information**
  The past fault logs of the elevators and escalators are recorded in addition to the operation logs of the computer.

- **Remote control**
  A computer allows remote control of special and emergency operations.
- **Scheduling of special operations**
  Special operation control (Optional)
  Special operation control (Optional)
  Scheduling of special operations (Optional)
  Emergency operation control (Optional)

**Elevator Monitoring and Control System: MelEye (Optional)**

**Display Information**

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

**Example display of partial-screen animated picture**

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

Urban Black   Stylish Blue   Fine Green   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.

**Recording of logs**

Please refer to the MelEye brochure for details.
Ceiling Designs

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

**Car Design Example**

- Ceiling (Customized-1) — Panel: Painted steel sheet [Y033: White]  
  Lighting: Central indirect lighting and downlights
- 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

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

**Car Design Example**

- Ceiling (Customized-2) — Panel: 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 — SUS-HL  
- Kickplate — SUS-HL  
- Flooring — Marble (supplied by customer)  
- Car operating panel — CBN4-C710  
- Handrails — YH-59M  
- Mirror — YZ-52A

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
- **Panel:** Painted steel sheet [Y033: White]
- **Lighting:** Downlights (LEDs)
- **Walls:** Pattern-printed steel sheet [CP111: Dark grain]
- **Transom panel:** Pattern-printed steel sheet [CP111: Dark grain]
- **Doors:** Pattern-printed steel sheet [CP101: Silver]
- **Front return panels:** SUS-HL
- **Kickplate:** SUS-HL
- **Flooring:** Durable vinyl tiles
- **Car operating panel:** CBV3-N730
- **Handrails:** YH-595

##### Optional Ceiling Design L210S
- **Panel:** SUS-HL
- **Others:** Same as L210.

#### N300
- **Panel:** Painted steel sheet [Y033: White]
- **Lighting:** Central indirect lighting and downlights
- **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:** Rubber tile (supplied by customer)
- **Car operating panel:** CBV1-C730 (faceplate: SUS-M)
- **Handrails:** YH-59M

##### Optional Ceiling Design N300S
- **Panel:** SUS-HL
- **Others:** Same as N300.

---

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

#### N130

- Light transmitted through exotic ceiling patterns

**Car Design Example**

- Ceiling (N130): Milky white resin panels
- Lighting: Full lighting
- 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: Rubber tile (supplied by customer)
- Car operating panel: CBV1-N710 (faceplate: SUS-M)
- Handrails: YH-59M
- Mirror: Y2 S3A

#### N120

- Gorgeous ceiling with lustrous translucent panels fused using refined geometric patterns

**Car Design Example**

- Ceiling (N120): Panels: [Center] Milky white resin panel
  
- [Sides] Resin panels with mirrored surface
- Lighting: Central lighting and downlights
- 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: Rubber tile (supplied by customer)
- Car operating panel: CBVS-N710
- Handrails: YH-59M

### Car Finish Application Table

<table>
<thead>
<tr>
<th>Materials/Finishes</th>
<th>Walls</th>
<th>Transom panel</th>
<th>Doors</th>
<th>Edge return walls</th>
<th>Kickplate</th>
<th>Flooring</th>
<th>Sill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern printed sheet</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
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<tr>
<td>Stainless steel, hairline-finish with engraved pattern*1 (SUS-HL)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Colored stainless steel, hairline-finish (colored SUS-HL)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Colored stainless steel, hairline-finish with engraved pattern*2 (colored SUS-HL)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, hairline-finish (SUS-M)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, mirror-finish (SUS-M)</td>
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<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, hairline-finish (SUS-HL)</td>
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<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, mirror-finish (SUS-HL)</td>
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<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>See-through door</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Mirror</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Mirror</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

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

Actual colors may differ slightly from those shown.
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 type in parentheses ( ) shows an auxiliary car operating panel (optional). The design is slightly different from the above images. Please consult our local agents for further information such as installation location.
*6: Please consult our local agents for the production terms, etc.

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

For side wall

Segment LED indicator *1
Segment LED indicator *2
Segment LED indicator *3

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 type in parentheses ( ) shows an auxiliary car operating panel (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.
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.
**Button Line-up**

Buttons accented with LED halo illumination
Illuminated characters and halos 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.

**Illumination colors**
- Yellow-orange
- White
- Blue

**Tactile**
- CBV1/PIV1/HBV1
- CBV2/PIV2/HBV2
- CBV3/PIV3/HBV3
- CBV4/PIV4/HBV4
- CBV5/PIV5/HBV5
- CBV6/PIV6/HBV6

**Flat**
- CBV2/PIV2/HBV2
- CBV4/PIV4/HBV4
- CBV6/PIV6/HBV6

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

**Note:**
- Flat buttons are not applicable to regulation EN8 1-70.

---

**Interior**

- **Mirrors**
  - YZ-52A (Half-size)
  - YZ-53A (Two-mirror set)
  - YZ-55N (Full height)

- **Handrails**
  - YH-59S (SUS-HL)
  - YH-59M (SUS-M)
  - YH-57S (SUS-HL)
  - YH-59G (SUS-M)

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

**E-302** Splayed Jamb
**E-202** Square Jamb

Hall Design Example of E-302

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

**E-102** Narrow Jamb

Hall Design Example of E-302

- Jamb: SUS-HL
- Doors: SUS-HL
- Hall position indicator and button: PIV1-A1010N

Entrance Finish Application Table

<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 (SUS-HL)</td>
<td>Standard</td>
<td>Optional</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Painted steel sheet</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, hairline finish with etched pattern (SUS-HE)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Glass windows (1330×1330×1330) (1130×1130×1130)</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Stainless steel</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
<td></td>
</tr>
</tbody>
</table>

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

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 Minimal stripe
  - CP101 Silver
  - CP141 Bright slate
  - CP121 Primary grain
  - CP111 Dark grain

**Etching patterns (gold or bronze):**
- EPA-1
- EPA-2
- EPA-3

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

**Pattern-printed sheet**
- Non-etched surface
- Etched surface

**Painted steel sheet**
- EPA-1
- EPA-2
- EPA-3
- Non-etched surface
- Etched surface

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

**Stainless-steel Hairline-finish**
- EPA-1
- EPA-2
- EPA-3
- Non-etched surface
- Etched surface

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

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

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

**Painted finish**
- Neutral Colors
  - Y033 White
  - Y004 Beige
  - Y071 Neutral beige
  - Y002 Dark brown
  - Y055 Dark gray
- Cool Colors
  - Y117 Lime green
  - Y118 Light grayish blue
  - Y119 Cool blue
  - Y156 Light brown
  - Y159 Cool orange
  - Y154 Red-violet
- Warm Colors
  - Y051 White
  - Y043 Lime green
  - Y044 Carrot orange

**Stainless-steel**
- Hairline-finish
- Mirror-finish (not applicable to the hall transom panel and jamb)

**Etching patterns (stainless-steel):**
- EPA-1
- EPA-2
- EPA-3
- EPA-4
- EPA-5
- EPA-6

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

**Flooring**
- Durable vinyl tiles
  - PR803 Gray
  - PR812 Dim-gray
  - PR801 Cream beige
  - PR810 Other

Actual colors may differ slightly from those shown.
## Features (1/2)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzzer</td>
<td>NDG</td>
<td>Optional when the operation system is 1C-2BC.</td>
</tr>
<tr>
<td>Time Adjustment</td>
<td>DCT</td>
<td>The time doors are open automatically is adjusted depending on whether the stop was called from the hall or car to allow smooth boarding of passengers or loading of baggage.</td>
</tr>
<tr>
<td>Door Load Detector</td>
<td>DLD</td>
<td>When excessive door load has been detected while opening or closing, the doors immediately reverse.</td>
</tr>
<tr>
<td>Door Holding Feature</td>
<td>DGH</td>
<td>Automatic holding feature, which stops doors for a specified period when they have been opened for longer than the preset period. With the AAN 80 or AAN 60 feature, a beep and voice guidance sound the alarm.</td>
</tr>
<tr>
<td>Door Sensor Self-Diagnosis</td>
<td>DOSS</td>
<td>Delays trip-instantaneous door closure to provide passengers time to reach the door and to help prevent pinching.</td>
</tr>
<tr>
<td>Electronic Door EMM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended Door Open Time</td>
<td>DOTE</td>
<td>When the button inside a car is pressed, the doors will remain open longer to allow a passenger to exit the car or for loading or unloading of baggage.</td>
</tr>
<tr>
<td>Hall Motion Sensor</td>
<td>HMS</td>
<td>感じる光線が入ると使用できるDOOS 10メートル で開閉操作を可能にする機能。</td>
</tr>
<tr>
<td>Multi Door Sear Sensor</td>
<td>LMS</td>
<td>Multiple infrared light beams cover some height of the doors to detect passengers or objects at the doors close. (Cannot be combined with the MSF feature.)</td>
</tr>
<tr>
<td>Reopen with Hall Button</td>
<td>RHB</td>
<td>Closing doors can be reopened by pressing the hall button corresponding to the traveling direction of the car.</td>
</tr>
<tr>
<td>Repaired Door Close</td>
<td>RDC</td>
<td>Should an obstacle prevent the doors from closing, the doors will repeatedly open and close until the obstacle is cleared from the doorway.</td>
</tr>
<tr>
<td>Safety Door Edge SDE</td>
<td></td>
<td>The sensitive door edge detects passengers or objects during door closing.</td>
</tr>
<tr>
<td>Safety Light SL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## DOOR OPERATION FEATURES

- Time Adjustment: DCT
- Door Load Detector: DLD
- Door Holding Feature: DGH
- Door Sensor Self-Diagnosis: DOSS
- Electronic Door: EMM
- Extended Door Open Time: DOTE
- Hall Motion Sensor: HMS
- Multi Door Sensor: LMS
- Reopen with Hall Button: RHB
- Repaired Door Close: RDC
- Safety Door Edge: SDE
- Safety Light: SL

### Notes
- 1C-2BC (1C-car service controller: Standard; 2C-2BC (2-car group control system: Optional)
- ZA-2000C (1- to 12-car group control system: Optional)
- Microprocessors or transmission line in the group controller has failed. |

## OPERATIONAL AND SERVICE FEATURES

- Automatic Back-up: ABD
- Height-limited automatic back-up, which stops the car at the height of expected parking location. |
- Multi Hall Call Dispensation: PHDS
- Three cars can carry all waiting passengers because in all, another car automatically be assigned for the remaining passengers. |

### Notes
- 1C-2BC (1-car service controller: Standard; 2C-2BC (2-car group control system: Optional)
- ZA-2000C (1- to 12-car group control system: Optional)
- Microprocessors or transmission line in the group controller has failed. |

## GROUP CONTROL FEATURES

- Bank Separation Operation: BSO
- Hall buttons and the cars called by each button can be divided into several groups for independent group control operation to serve special needs of different floors. |
- Car Allocation Tuning: CAT
- The number of cars allocated or parked on crowded floors is controlled not according to the distance in those crowded floors but also the operational status of group and the traffic on each floor. |
- Car Travel Time Evaluation: CTE
- The number of cars allocated or parked on crowded floors is controlled not according to the distance in those crowded floors but also the operational status of group and the traffic on each floor. |
- Cooperation Optimization Assignment: CUA
- The cooperation optimization assignment feature is performed only at regular times. |
- Destined Oriented Allocation System: DOI
- Destined Oriented Allocation System can be assigned by the nearest car to serve the floor. The passenger does not need to press a button in the car. Dispensers to passengers by destination prevents congestion in the car and maintains waiting and traveling time. |

### Notes
- 1C-2BC (1-car service controller: Standard; 2C-2BC (2-car group control system: Optional)
- ZA-2000C (1- to 12-car group control system: Optional)
- Microprocessors or transmission line in the group controller has failed. |
### GROUP CONTROL FEATURES (Continued from the previous page)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator Call System with Smartphone</td>
<td>ECLS-SP</td>
<td>The system selects the elevators that best balance operational efficiency and energy consumption according to each elevator's current location and passenger load as well as predicted congestion levels throughout the day.</td>
</tr>
<tr>
<td>Elevator Call System</td>
<td>ECLS</td>
<td>To save energy, some elevators are automatically put into sleep mode if there are no calls for a specified period.</td>
</tr>
<tr>
<td>Elevator Energy Saving Operation</td>
<td>ESG-W</td>
<td>To save energy, the car speed is automatically reduced to some extent, but not so much that it adversely affects passenger waiting time.</td>
</tr>
<tr>
<td>Elevator Dynamic Rule-set</td>
<td>ESG-V</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>Forward Floor Stop</td>
<td>FFS</td>
<td>All cars in a bank automatically make a stop at a pre-determined floor on every trip without being called.</td>
</tr>
<tr>
<td>Intense Up Peak</td>
<td>IUP</td>
<td>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 allocate, 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>Main Floor Changeover Operation</td>
<td>MFS</td>
<td>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 by using manual switches.</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. (In China, the car parks with the doors closed.)</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>Peak Hour Call Service</td>
<td>PHCS</td>
<td>Special calls, such as observations elevators and elevators with basement service, are given higher priority to respond to hall calls in order to minimize passenger travel time.</td>
</tr>
<tr>
<td>Strategic Overall Spacing</td>
<td>SORS</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 check-in time, etc., and minimize passenger waiting time.</td>
</tr>
<tr>
<td>VIP Operation</td>
<td>VIP-S</td>
<td>A specified car 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>

### SIGNAL AND DISPLAY FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auxiliary Car</td>
<td>ACC</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 synthetic voice (and/or buzzer) alerts passengers inside an elevator that elevator operation has been temporarily interrupted by overloading or a similar cause. (Available in limited languages.)</td>
</tr>
<tr>
<td>Car Arrival Chime</td>
<td>CAC</td>
<td>Electronic chimes sound to indicate that a car will soon arrive. (The chimes are mounted either on top and bottom of the car, or in each hall.)</td>
</tr>
<tr>
<td>Car Information Display</td>
<td>CID</td>
<td>This 9.4- or 15-inch LCD for car operating 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 LCD 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 hall lantern, which corresponds to a car's service direction, blinks to indicate that the car will soon arrive.</td>
</tr>
<tr>
<td>Hall Information Display</td>
<td>MID</td>
<td>This 10.4- or 15-inch LCD for elevator halls shows the date and time, car position, travel direction and elevator status messages.</td>
</tr>
<tr>
<td>Hall LCD Position Indicator</td>
<td>HLD-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 corresponding hall lantern lights up. If a chime sounds once to indicate which doors will open.</td>
</tr>
<tr>
<td>Intercom Communication System</td>
<td>ITF</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>SCP</td>
<td>When a hall is closed to the extent that one car cannot accommodate all waiting passengers, the hall lantern of the next car to serve the hall will light up.</td>
</tr>
<tr>
<td>Sonic Car Button — Click Type</td>
<td>ACB</td>
<td>A click-type car button which emits electronic beep sounds when pressed to indicate that the car has been registered.</td>
</tr>
<tr>
<td>Vance Guidance System</td>
<td>ANG</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-2BC (1-car selectivity controlled) - Standard, 2C-8C (2-car group control system) - Optional, 3A-2BC (3- to 4-car group control system) - Optional, 3A-2BC (3- to 8-car group control system) - Optional
## Important Information on Elevator Planning

### Work Not Included in Elevator Contract

The following items are excluded from Mitsubishi Electric’s elevator installation work. Their conditions and other details are to be conformed to the statement of local laws or Mitsubishi Electric elevator’s requirements on 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 hoistway.
- The provision of a ladder to the elevator pit.
- The provision of openings and supporting members as required for equipment installation.
- The provision of separate beams when the hoistway dimensions markedly exceed the specifications, and 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 voltage, number of phases, and frequency of the power source for the motor and lighting.
- A sketch of the part of the building where the elevators are to be installed.
- Signal equipment.
- Entrance design.
- Operation system.
- The total elevator travel and each floor-to-floor height.
- 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.

### 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.

## Specifications

### Operation System

- 2-car group control system (2C-2BC), 3- or 4-car group control ZA425 system, or 3- to 8-car group control ZAI-2000C system

### Door System

- Standard: 1-car selective collective (1C-2BC)
- Optional: 2-panel center opening (CO)
- Optional: 2-panel side sliding opening (SD) or 4-panel center opening (ZCO)

### 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>EN81-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>750</td>
<td>10</td>
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<tr>
<td></td>
<td>11</td>
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<td>□</td>
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<tr>
<td>900</td>
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<td>□</td>
<td>○</td>
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<tr>
<td>3000</td>
<td>46</td>
<td>□</td>
<td>○</td>
<td>□</td>
</tr>
</tbody>
</table>

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

### Important Information on Elevator Planning

- The minimum floor to floor height (mm)
  - 3000
  - 2500
  - 2250
  - 2000
  - 1800
  - 1600
  - 1400
  - 1200
  - 1000
  - 900
  - 750
  - 600
  - 500
  - 400
  - 300
  - 200
  - 100

- The voltage fluctuation shall be within a range of +5% to -10%.

- The following conditions are required for maintaining elevator performance:
  - The security system, such as a card reader, connected to Mitsubishi Electric’s elevator controller, when supplied by the building owner or general contractor.
  - The provision of a suitable, locked space for the storage of elevator equipment and tools during elevator installation.
  - 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 provision of openings and supporting members as required for equipment installation.
  - The provision of separate beams when the hoistway dimensions markedly exceed the specifications, and intermediate beams and separator partitions when two or more elevators are installed.
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  - The power consumed in installation work and test operations.
  - All the necessary building materials for grouting in of brackets, bolts, etc.
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Note: Work responsibilities in installation and construction shall be determined according to local laws.

---

1. The symbol ○ shown in the table indicates that a technical inquiry is required.
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### Door System

- Standard: 1-car selective collective (1C-2BC)
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- Optional: 2-panel side sliding opening (SD) or 4-panel center opening (ZCO)

### Operation System

- Standard: 2-car group control system (2C-2BC), 3- or 4-car group control ZA425 system, or 3- to 8-car group control ZAI-2000C system

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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, 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 in Japan and 12 global manufacturing factories are utilized in a worldwide 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.

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.