

PASSENGER ELEVATORS  
(MACHINE-ROOM-LESS SYSTEM)  
For USA

# Enhanced Connectivity & Efficiency



**Diamond Trac®**  
Elevator System

# 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.



Efficiency

Comfort

Ecology

Safety

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 place 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.

## 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.



## Contents

### Profile

Concept	P.3
Products You Can Trust	P.5
Enhanced Connectivity & Efficiency	P.7
Innovative Technology	P.9

### Functions

Standard Features	P.11
Optional Features	P.13

### Specifications & Layouts

Rear counterweight arrangement / Capacity: 2000lb~4000lb	P.15
Side counterweight arrangement / Capacity: 2500lb~4000lb	P.17
Side counterweight arrangement / Capacity: 4000lb~5000lb	P.19

### Information

Important Information on Elevator Planning	P.21
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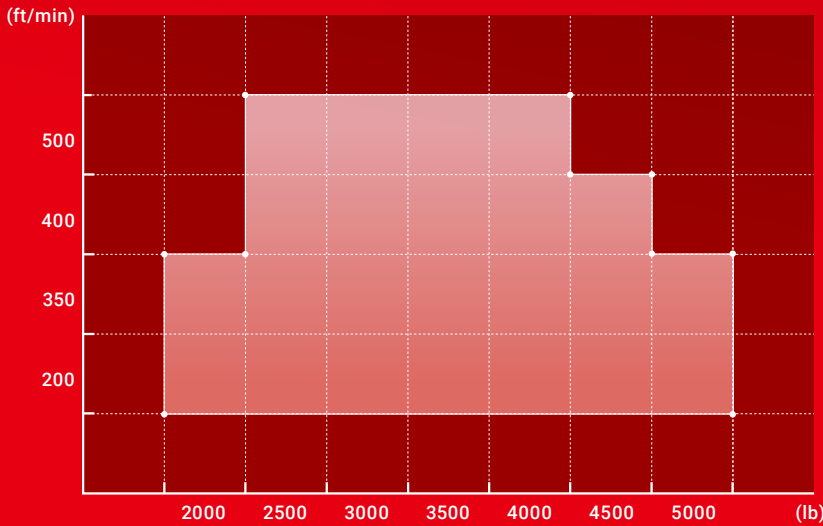
# The Evolution of Mitsubishi Electric Quality

Mitsubishi Electric elevator quality is constantly evolving. Our machine-room-less elevator provides technological advances that deliver a world-class ride in terms of comfort, reliability and safety.

Machine-room-less elevators

**Diamond Trac<sup>®</sup>**  
Elevator System

Application \*



\*Detailed specifications are provided on pages 15-20.

## Freedom of Layout

Architects and interior designers have more design freedom than ever before.

### Efficiently designed and optimally configured

Mitsubishi Electric has succeeded in enhancing the fit and layout of key elevator equipment. The gearless traction machine with PM motor is installed within the hoistway. This arrangement frees up space usually required for separate machine rooms or penthouses. Equipment is configured for easy maintenance from car top, and the entire compact system is optimally organized for performance and service.

### Improved flexibility

Diamond Trac<sup>®</sup> Elevator System uses further optimized equipment\* to reduce the load stress applied on the building structure and save more space, thereby enhancing the flexibility in architectural design.

\*This is only applicable to elevators with specifications shown in the pages 17-18.



\*The image shown in the middle is an example of hoistway. The equipment layout differs depending on the specifications.



# Products You Can Trust

Mitsubishi Electric is proud of the design standards it incorporates to ensure product quality. Stringent design criteria are applied throughout, from traction machines and speed governors to safety and door devices that interact closely with the user. Superior quality, realized through strict inspections and quality testing, ensures advanced safety and reliability.

Profile

Functions

Specifications & Layouts

Information

## Reliability & Ecology

We utilize the utmost care in elevator design, even for items that are never seen. Attention to detail that leaves users assured our elevators can be used safely for many years to come. Once experienced first-hand, passengers can appreciate the quality that has led to consistently high reviews from our customers.



### Uncompromised reliability

The majority of elevator accidents occur near the doors. That is why we design the door system to be so robust and reliable, with the utmost focus on eliminating failures and maximizing customer experience and safety. As a result, you can expect the number of callbacks, the burden of restoration work, and the negative impact from interrupted service to be significantly reduced. Everyone can look forward to a safe and trouble-free ride.

### Sustainable performance

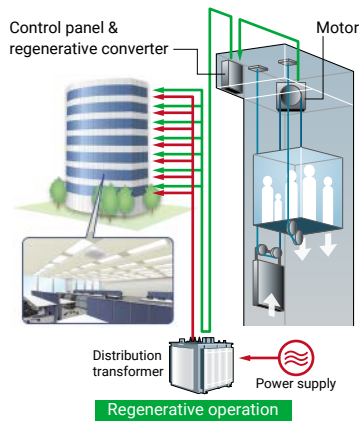
With the passage of time, elevator performance can become degraded, leading to slight vibration, operating noise or inaccurate landing. Our elevators are built with high standards of quality - with proper maintenance, customers can expect “like new” operation over the life of the product.

### Using energy wisely

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

#### ■ Reusing energy: Regenerative Converter [PCNV] (Optional)

Elevators usually travel using power from a power supply (powered operation), however, when they travel down with a heavy car load or up with a light car load (regenerative operation), the traction machine functions as a power generator. Although the power generated during traction machine operation is usually dissipated as heat, the regenerative converter transmits the power back to the distribution transformer and feeds it into the electrical network in the building along with electricity from the power supply. Compared to the same type of elevator without a regenerative converter, this system provides an energy-saving effect of up to 35 percent. (Reduction in CO<sub>2</sub> emissions: 1400kg/year) In addition, the regenerative converter has the effect of decreasing harmonic currents.



## Safety & Comfort

Considering that elevators are part of society's infrastructure, their safety and comfort are vital. Diamond Trac® Elevator System is packed with functions and considerations to ensure an anxiety-free ride.



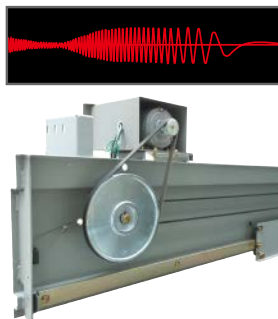
### Sophisticated touchless interface\*

This simple, no-touch product allows users to call an elevator and designate a destination floor by placing a hand or finger over a sensor without the need to touch at all. The PURER(I)DE™ touchless control helps our customers improve the usability and convenience of elevators as our society creates a more comfortable, resilient, and responsive built environment.

\*Contact a Mitsubishi Electric representative for more information.

### Smooth door operation

Smooth and quiet door operation has been achieved using a highly efficient Reduced Instruction Set Computer (RISC) and Variable Voltage, Variable Frequency (VVVF) inverters. Our intelligent door systems detect the constant variation in door load on each floor, the strength of the wind in the elevator shaft, and even the sediment in the door tracks, and the RISC adjusts the door speed and motor torque via an automatic tuning function. Furthermore, our robust door operating equipment is structurally isolated from the car to prevent the transmission of noise and vibration to the car.



### Safe boarding

Our primary concern is for users to safely step across the threshold. Equipped with an infrared sensor, Mitsubishi's Multi-beam Door Sensor ensures the doors stop closing immediately and reopen if a passenger or object is detected.



Multi-beam Door Sensor

### Comfortable ride

Leading-edge control systems and devices, along with highly skilled installation technology, assure that even when traveling at high speeds, the ride will be smooth and quiet from start to stop. And, when reaching your floor, you can count on perfect floor alignment.



So smooth a coin on edge won't fall

Profile

Functions

Specifications & Layouts

Information

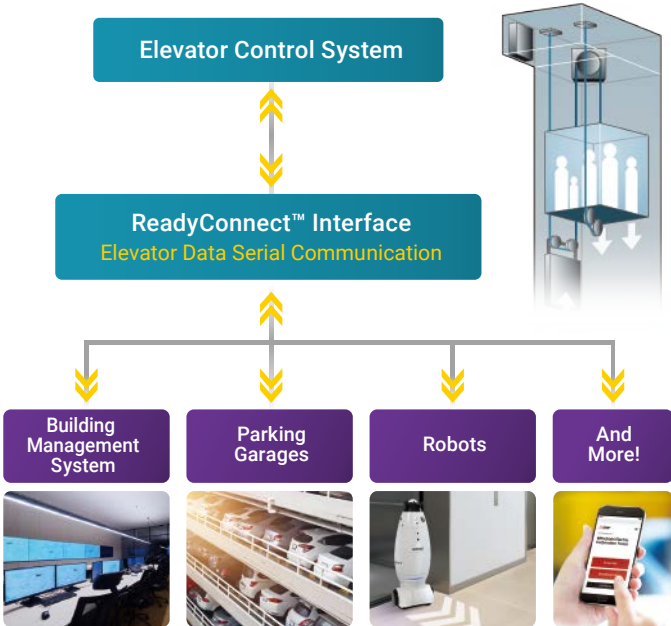


Streamlining  
Connectivity

ReadyConnect™  
Network Communication  
Protocol Gateway (Optional)\*

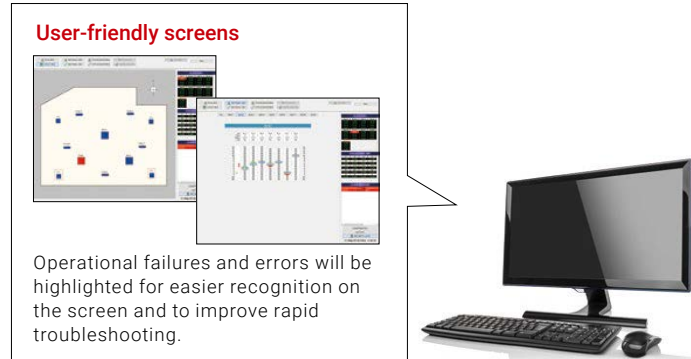
ReadyConnect™ is a network communication device that allows Mitsubishi Electric passenger elevator systems to communicate and connect with other building systems, acting as an interpreter. Historically, elevator systems have been relatively isolated and difficult to integrate with other building systems for monitoring and control. Mitsubishi Electric's ReadyConnect network communication protocol gateway, however, opens the doors to the next level of connectivity with the ability to speak to multiple systems, including HVAC, security and user information systems, concierge desk assistant robots, parking garages and more.

\*Contact a Mitsubishi Electric representative for more information.



Elevator Monitoring and  
Control System:  
MeEye [WP-W] (Optional)

Mitsubishi Electric's MeEye is a sophisticated Web-based elevator and escalator monitoring and control system that allows authorized personnel to respond rapidly to changing traffic patterns and other operational conditions. It improves passenger safety and reliability of your building management.



Efficiency

ΣAI® Group Control System: ΣAI-22 and ΣAI-2200C

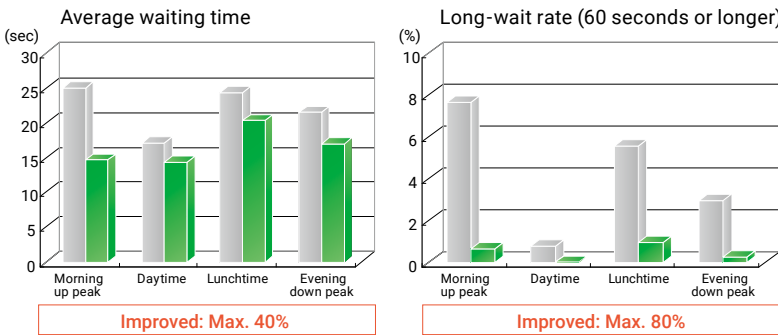
Intuitive & comfortable

Incorporating the latest advancements in fuzzy-logic, our group control system utilizes intuitive control to provide reliable dispatching and a stress-free ride. The moment a hall call button is pressed, the optimal car to respond to the call is selected based on factors such as waiting time, travel time, current car occupancy and energy consumption.

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

Group control systems	Suitable building size	Number of cars in a group
ΣAI-22 system	Small to medium	2 to 4
ΣAI-2200C system	Large (especially buildings with dynamic traffic conditions)	2 to 8

Performance



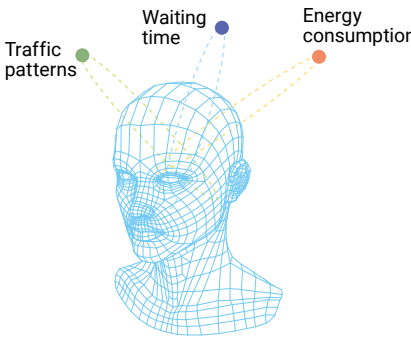
Forecasting a near-future hall call to reduce long waits

When a hall call is registered, the artificial intelligence predicts a near-future call 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.

Selects optimum car allocation through "rule-set" simulation

The neural network technology has enabled the system to continually and accurately predict the passenger traffic within intervals of several minutes. A high-speed RISC runs real-time simulations using multiple rule-sets and the predicted passenger traffic to select the rule-set which optimizes transport efficiency.

AI arranges cars most effectively, taking various factors into account.



Immediate Prediction Indication [AIL] (Optional)

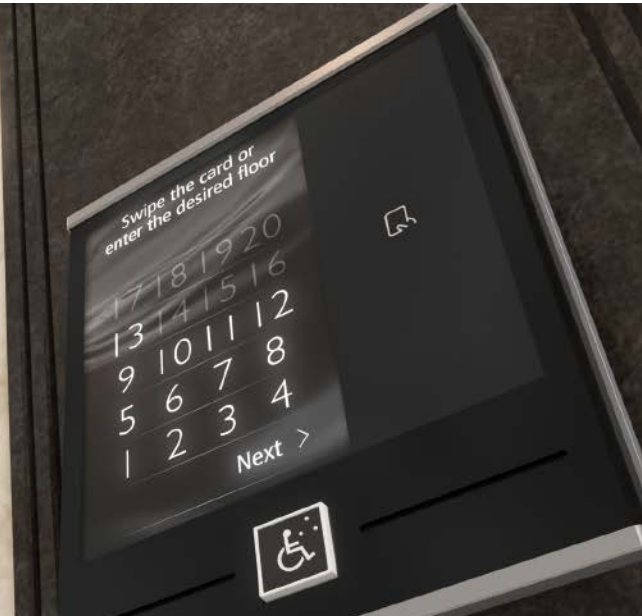
Easing stress of waiting at elevator hall

When a passenger has registered a hall call, the best car to respond to that call is immediately selected and the corresponding hall lantern lights up, a chime sounds, and the light starts flashing just before car arrival to indicate which doors will open.



# Convenience

Introducing sophisticated operation systems that enhance comfort, mobility and building security.

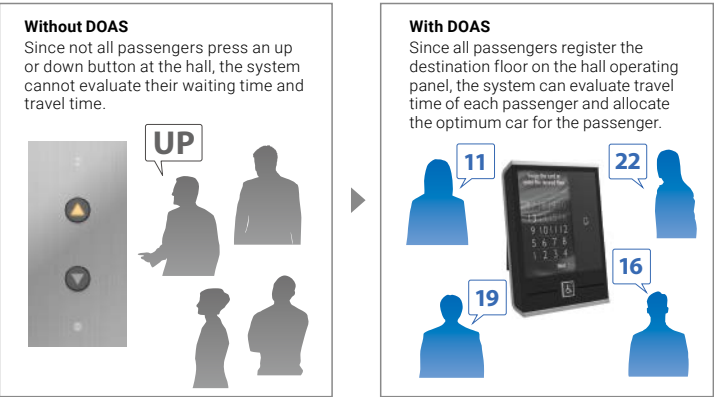


## More Efficient, More Comfort

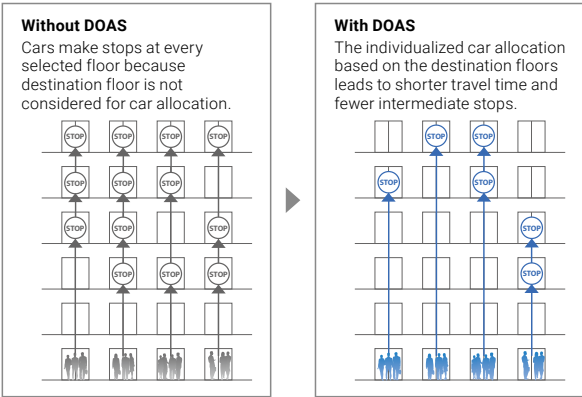
### •Destination Oriented Allocation System [DOAS®] (Optional)

Passengers register their destination floor using a hall operating panel before entering the elevator, eliminating the need to press the button inside the car. Furthermore, dispersing passengers by destination prevents congestion in cars and minimizes waiting and travel time.

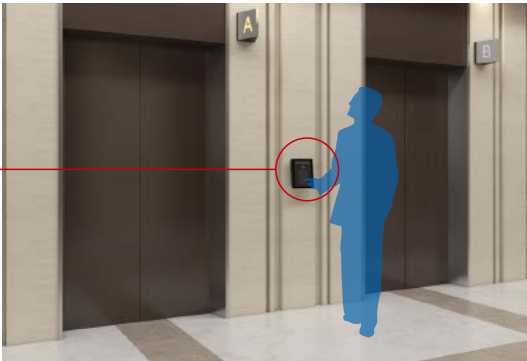
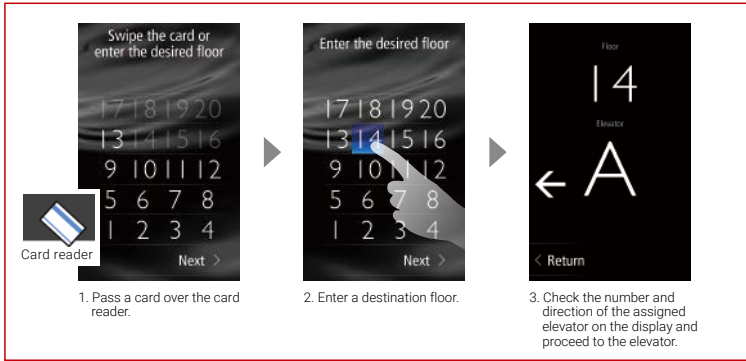
#### Evaluating travel time



#### Reducing travel time

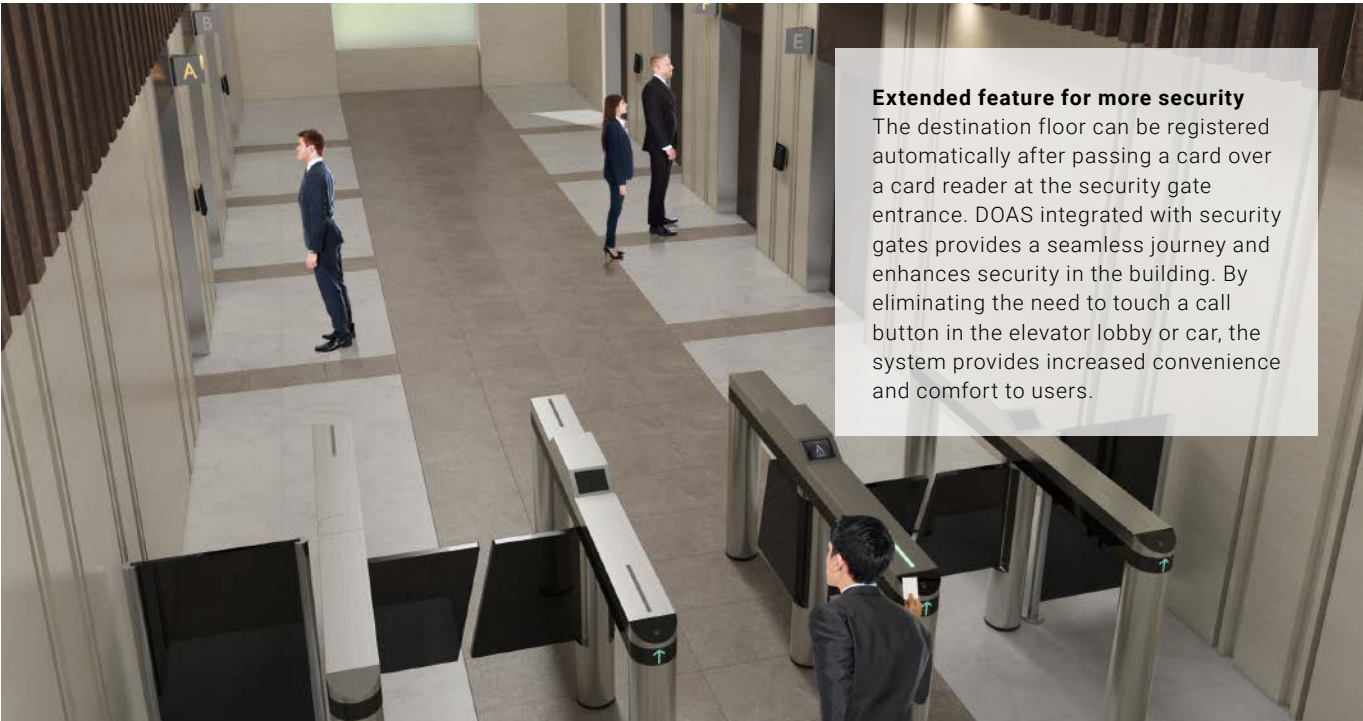


#### How to use hall operating panel



## More Security

### •DOAS Integrated with Security Gate (Optional)



**Extended feature for more security**

The destination floor can be registered automatically after passing a card over a card reader at the security gate entrance. DOAS integrated with security gates provides a seamless journey and enhances security in the building. By eliminating the need to touch a call button in the elevator lobby or car, the system provides increased convenience and comfort to users.

## More Closely Connected

### •Elevator Call System with Smartphone (Optional)

Users can call an elevator remotely by accessing a dedicated website with a smartphone.

By eliminating the need to touch a call button in the elevator lobby or car, the system provides increased convenience and comfort to users.





Feature	Abbreviation	Description	1C 2BC	2C to 4C ΣAI-22	2C to 8C ΣAI-2200C
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■ Standard Features

EMERGENCY OPERATIONS AND FEATURES

Earthquake Emergency Operation	EER-DS	In case of earthquake detection, the elevator stops at the nearest available floor and shuts down with the door open. (Detailed operation conforms to the local code.)	✓	✓	✓
Firefighters' Emergency Operation	FE	In case of fire, the elevator performs firefighters' emergency operation (Phase I and Phase II) conforming to the local code.	✓	✓	✓

DOOR OPERATION FEATURES

Automatic Door-open Time Adjustment	DOT	The amount of time that doors are open will automatically adjust depending on whether the stop was called from the hall or the car, to allow smooth boarding of passengers or loading of baggage.	—	—	✓
Automatic Door Speed Control	DSAC	Door load on each floor, which can depend on the type of hall door, is monitored to adjust the door speed, thereby making it consistent throughout all floors.	✓	✓	✓
Door Load Detector	DLD	When excessive door load has been detected while opening or closing, the doors immediately move in the reverse direction.	✓	✓	✓
Door Nudging Feature — With Buzzer	NDG	The doors slowly close when they have remained open for longer than the preset period with alarm sound.	✓	✓	✓
Door Sensor Self-diagnosis	DODA	Failure of non-contact door sensors is checked automatically, and if a problem is diagnosed, the door-close timing is delayed and the closing speed is reduced to maintain elevator service and ensure passenger safety.	✓	✓	✓
Electronic Doorman	EDM	Door open time is minimized using safety ray(s) or multi-beam door sensors that detect passengers boarding or exiting.	✓	✓	✓
Multi-beam Door Sensor	—	Multiple infrared-light beams cover some height of the doors as they close to detect passengers or objects.	✓	✓	✓
Reopen with Hall Button	ROHB	Closing doors can be re-opened by pressing the hall button corresponding to the traveling direction of the car.	✓	✓	✓
Repeated Door-close	RDC	Should an obstacle prevent the doors from closing, the doors will repeatedly open and close until the obstacle is removed.	✓	✓	✓

OPERATIONAL AND SERVICE FEATURES

Automatic Bypass	ABP	A fully loaded car bypasses hall calls in order to maintain maximum operational efficiency.	✓	✓	✓
Automatic Hall Call Registration	FSAT	If one car cannot carry all waiting passengers because it is full, another car will automatically be assigned for the remaining passengers.	✓	✓	✓
Backup Operation for Group Control Microprocessor	GCBK	An operation by car controllers which automatically starts to maintain elevator operation in the event that a microprocessor or transmission line in the group controller has failed.	—	✓	✓
Car Call Canceling	CCC	When a car has responded to the final car call in one direction, the system regards remaining calls in the other direction as errors and clears them from the memory.	✓	✓	✓
Car Fan Shut Off — Automatic	CFO-A	If there are no calls for a specified period, the car ventilation fan will automatically turn off to conserve energy.	✓	✓	✓
Car Light Shut Off — Automatic	CLO-A	If there are no calls for a specified period, the car lighting will automatically shut off to conserve energy.	✓	✓	✓
Continuity of Service	COS	A car which is experiencing trouble is automatically withdrawn from group control operation to maintain overall group performance.	—	✓	✓
False Call Canceling — Automatic	FCC-A	If the number of registered car calls does not correspond to the car load, all calls are canceled to avoid unnecessary stops.	✓	✓	✓
Independent Service	IND	Exclusive operation where a car is withdrawn from group control operation for independent use, such as maintenance or repair, and responds only to car calls.	✓	✓	✓
Next Landing	NXL	If the elevator doors do not open fully at a destination floor, the doors close and the car automatically moves to the next or nearest floor, where the doors will open.	✓	✓	✓
Overload Holding Stop	OLH	A buzzer sounds to alert the passengers that the car is overloaded; the doors remain open and the car does not leave that floor until enough passengers exit the car.	✓	✓	✓
Safe Landing	SFL	If a car has stopped between floors due to an equipment malfunction, the controller checks the cause, and if it is considered safe to move the car, the car will move to the nearest floor at a low speed and the doors will open.	✓	✓	✓

Feature	Abbreviation	Description	1C 2BC	2C to 4C ΣAI-22	2C to 8C ΣAI-2200C
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GROUP CONTROL FEATURES

Car Allocation Tuning	CAT	The number of cars allocated or parked on crowded floors are controlled not just according to the conditions on those crowded floors, but also on the operational status of each car and the traffic on each floor.	—	—	✓
Car Travel Time Evaluation	—	Cars are allocated to hall calls by considering the number of car calls that will reduce passenger waiting time in each hall and the travel time of each car.	—	✓	✓
Cooperative Optimization Assignment	—	The system predicts a potential hall call which could cause longer waiting time. Car assignment is performed considering not only current and new calls but also near-future calls.	—	—	✓
Distinction of Traffic Flow with Neural Networks	NN	Traffic flows in a building are constantly monitored using neural network technology, and the optimum operational pattern, such as Lunchtime Service or Up Peak Service, is selected or canceled accordingly at the appropriate time.	—	—	✓
Dynamic Rule-set Optimizer	DRO	Traffic flows in a building 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.	—	—	✓
Energy-saving Operation — Allocation Control	ESO-W	The system 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.	—	—	✓
Expert System and Fuzzy Logic	—	Artificial expert knowledge, which has been programmed using "expert system" and "fuzzy logic," is applied to select the ideal operational rule for maximum efficiency of group control operations.	—	✓	✓
Peak Traffic Control	PTC	A floor which temporarily has the heaviest traffic will be served with higher priority than other floors, but not to an extent that interferes with service to other floors.	—	✓	✓
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 response to actual service conditions.	—	✓	✓
Strategic Overall Spotting	SOHS	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.	—	✓	✓

SIGNAL AND DISPLAY FEATURES

Basic Announcement	AAN-B	A synthetic voice (and/or buzzer) that alerts passengers inside a car to the fact that elevator operation has been temporarily interrupted by overloading or a similar cause. (Voice available only in English.)	✓	✓	✓
Car Arrival Chime — Car	AECC	Electronic chimes that sound to indicate that a car will soon arrive. (The chimes are mounted on the top and bottom of the car.)	✓	✓	—
Car/Hall Click Type Call Buttons	—	Call buttons that click softly when touched are fitted as standard.	✓	✓	✓
Flashing Hall Lantern	FHL	A hall lantern, which corresponds to a car's service direction, flashes to indicate that the car will soon arrive.	✓	✓	✓
Inter-communication System	ITP	A system that allows communication between passengers inside a car and the building personnel.	✓	✓	✓

Note: — = Not applicable

Feature	Abbreviation	Description	1C 2BC	2C to 4C ΣAI-22	2C to 8C ΣAI-2200C
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■ Optional Features

EMERGENCY OPERATIONS AND FEATURES

Emergency Car Lighting	ECL	Car lighting which turns on immediately when power fails to provide a minimum level of lighting within the car. (Choice of dry-cell battery or trickle-charger battery.)	✓	✓	✓
MeEye Mitsubishi Elevators & Escalators Monitoring and Control System	WP-W	Each elevator's status and operations can be monitored and controlled using an advanced web-based technology which provides an interface through personal computers. Special optional features, such as preparation of traffic statistics and analysis, are also available.	✓	✓	✓
Mitsubishi Emergency Landing Device	MELD	In case of 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 ensure passenger safety. (Max. allowable floor-to-floor distance is 36'-1".)	✓	✓	✓
Operation by Emergency Power Source — Automatic	OEPS-AU	In case of power failure, the elevator moves to the designated floor and opens the door to secure the safety of passengers. Then, the elevator will operate by emergency power until normal power recovery. (Detailed operation conforms to the local code.)	—	✓	✓
Supervisory Panel	WP	A panel installed in a building's supervisory room, which monitors and controls each elevator's status and operations by remotely using indicators and switches provided on request.	✓	✓	✓

DOOR OPERATION FEATURES

Extended Door-open (Door Hold) Button	DKO-TB	A button located inside a car which keeps the doors open for a longer than usual period to allow loading and unloading of a stretcher, baggage, etc.	✓	✓	—
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OPERATIONAL AND SERVICE FEATURES

Car Call Erase	FCC-P	If a wrong car button is pressed, it can be canceled by quickly pressing the same button again twice.	✓	✓	✓
Elevator and Security System Interface	EL-SCA/ EL-SC	Personal authentication by building's security devices can trigger predetermined elevator operation such as permission of access to private floors, automatic registration of a hall call and a destination floor, and priority service.	✓ <sup>#1</sup>	✓ <sup>#1</sup>	✓ <sup>#1</sup>
Landing Open	LO	Doors start opening right before the car has completely stopped at a floor.	✓	✓	✓
Non-Service Temporary Release for Car Call — Card Reader Type	NSCR-C	To enhance security, car calls for desired floors can be registered only by placing a card over a card reader. This function is automatically deactivated during emergency operations.	✓	✓	✓
Non-service to Specific Floors — Car Button Type	NS-CB	To enhance security, service to desired floors can be set to disable using the car operating panel. This function is automatically deactivated during emergency operations.	✓	✓	✓
Non-service to Specific Floors — Switch Type	NS	To enhance security, service to desired floors can be set to disable using a manual switch. This function is automatically deactivated during emergency operations.	✓	✓	✓
Out-of-service — Remote	RCS	With a key switch on the supervisory panel, etc., a car can be called to a specified floor after responding to all car calls, and then automatically be taken out of service.	✓	✓	✓
Regenerative Converter	PCNV	For energy conservation, power regenerated by a traction machine can be used by other electrical systems in the building.	✓	✓	✓
Secret Call Service	SCS-B	To enhance security, car calls for desired floors can be registered only by entering secret codes using the car buttons on the car operating panel. This function is automatically deactivated during emergency operations.	✓	✓	✓

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 or different floors.	—	✓	✓
Closest-car Priority Service	CNPS	A function to give priority allocation to the car closest to the floor where a hall call button has been pressed, or to reverse the closing doors of the car closest to the pressed hall call button on that floor. (Cannot be combined with Hall Position Indicators.)	—	✓ <sup>#1</sup>	✓
Congested-floor Service	CFS	The timing of car allocation and the number of cars to be allocated to floors where meeting rooms or ballrooms exist and the traffic intensifies for short periods of time are controlled according to the detected traffic density data for those floors.	—	✓	✓
Destination Oriented Allocation 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. Dispersing passengers by destination prevents congestion in the cars and minimizes waiting and traveling time. (Cannot be combined with some features. Please consult your local sales office for details.)	—	—	✓ <sup>#2</sup>
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-out time, etc. to minimize passenger waiting time.	—	✓	✓
Elevator Call System with Smartphone	ELCS-SP	Users can call an elevator remotely by accessing a dedicated website with a smartphone. By eliminating the need to touch a call button in the elevator lobby or car, the system provides increased convenience and comfort to users.	✓ <sup>#1</sup>	✓ <sup>#1</sup>	✓ <sup>#1</sup>
Energy Saving Operation — Number of Cars	ESO-N	To save energy, the number of service cars is automatically reduced to some extent but not so much as to adversely affect passenger waiting time.	—	✓	✓

Feature	Abbreviation	Description	1C 2BC	2C to 4C ΣAI-22	2C to 8C ΣAI-2200C
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GROUP CONTROL FEATURES

Forced Floor Stop	FFS	All cars in a bank automatically make a stop at a predetermined floor on every trip without being called.	✓	✓	✓
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.	—	—	✓
Light-load Car Priority Service	UCPS	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.)	—	✓ <sup>#1</sup>	✓
Lunchtime Service	LTS	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.	—	✓	✓
Main Floor Changeover Operation	TFS	This feature is effective for buildings with two main floors. The floor designated as the "Main floor" in a group control operation can be changed as necessary using a manual switch.	✓	✓	✓
Main Floor Parking	MFP	An available car always parks on the main floor with the doors open to reduce passenger waiting time.	✓	✓	✓
Special Car Priority Service	SCPS	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.)	—	✓ <sup>#1</sup>	✓
Special Floor Priority Service	SFPS	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.)	—	✓ <sup>#1</sup>	✓
Swing Service	SWSV	A car is temporarily split from the group to work as a single car. This dedicates one car to mail deliveries or facility maintenance through certain parts of the day. The swing car is operated from an inconspicuous riser of pushbuttons mounted in the doors jamb.	—	✓	✓
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 from the lobby floor during office starting time, hotel check-in time, etc., and minimize passenger waiting time.	—	✓	✓

SIGNAL AND DISPLAY FEATURES

Car Arrival Chime — Hall	AECH	Electronic chimes that sound to indicate that a car will soon arrive. (The chimes are mounted in each hall.)	✓	✓	✓ <sup>#3</sup>
Immediate Prediction Indication	AIL	When a passenger has registered a hall call, the best car to respond to that call is immediately selected, the corresponding hall lantern illuminates and a chime sounds once to indicate which doors will open.	—	—	✓
Second Car Prediction	TCP	When a hall is crowded to the extent that one car cannot accommodate all waiting passengers, the hall lantern will light up to indicate the next car to serve the hall.	—	—	✓
Voice Guidance System	AAN-G	Information on elevator service such as the current floor or service direction that is heard by the passengers inside a car. (Voice guidance available only in English.)	✓	✓	✓

Notes: — = Not applicable  
#1: Contact a Mitsubishi Electric representative for lead times and details.  
#2: DOAS cannot be combined with BSO, IUP, UPS, TFS, FSAT, FCC-A, DKO-TB or TCP feature.  
#3: AECH is standard feature when 2-8 car ΣAI-2200C is applied.



BASIC SPECIFICATIONS\*1

Rear counterweight arrangement / Capacity: 2000lb ~ 4000lb

Horizontal dimensions

Opening	Rated speed (ft/min)	Capacity (lb)	Door type*2	Car inside clear dimensions		Entrance width JJ (ft-in)	Minimum hoistway dimensions*3, 4, 7		
				Width (ft-in)	Depth (ft-in)		Width		BH: Depth (ft-in)
							1-unit installation AU (ft-in)	2-unit installation AH (ft-in)	
Front	200 350	2000	SS	5'-8"	4'-3 3/4"	3'-0"	7'-6"	15'-4"	6'-11"
	200 350 400 500	2500	SS or CO	6'-8"	4'-8 3/4"	3'-6"	8'-6"	17'-4"	7'-4"
	3000	5'-4 3/4"							
	3500								
	200 350 400 *9 500 *9	4000	CO	7'-8"	5'-4 3/4"	4'-0"	9'-7"	19'-6"	8'-0"

Vertical dimensions

<Rated Speed 200ft/min and 350ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		200ft/min			350ft/min		
		PD (ft-in)*5, 7	OH*6 (ft-in)		PD (ft-in)*5, 7	OH*6 (ft-in)	
	Canopy height		Canopy height	Canopy height		Canopy height	
		Non-seismic / Seismic	8'-0"	9'-6"	Non-seismic / Seismic	8'-0"	9'-6"
Front	2000	5'-5 1/2"	14'-3"	15'-8 11/16"	5'-11 1/2"	14'-6"	15'-11 11/16"
	2500						
	3000						
	3500						
	4000	5'-8"	15'-1"	16'-6 11/16"	6'-1"	15'-5"	16'-10 11/16"

<Rated Speed 400ft/min and 500ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		400ft/min			500ft/min		
		PD (ft-in)*5, 7	OH*6 (ft-in)		PD (ft-in)*5, 7	OH*6 (ft-in)	
			Canopy height	Canopy height		Canopy height	Canopy height
Non-seismic / Seismic		8'-0"	9'-6"	Non-seismic / Seismic	8'-0"	9'-6"	
Front	2500	6'-3"	15'-3" *8	16'-8 11/16" *8	7'-5"	16'-1" *8	17'-6 11/16" *8
	3000						
	3500						
	4000 *9	6'-4 13/16"	16'-0 7/8"	17'-6 5/8"	7'-2 1/16"	16'-8 3/4"	18'-2 13/16"

Notes

\*1. The contents herein are standard specifications and layouts without counterweight safety. They are based on ASME A17.1 and applicable to a non-seismic parameter/zone and Seismic Design Category (SDC) A to D/seismic zone 0 to 4. Contact a Mitsubishi Electric representative for installation in a higher seismic area or any specification not shown in these tables.

\*2. SS: Single-slide door, CO: Center-open doors

\*3. Hoistway dimensions (AU, AH, BH, PD, OH) are for standard specifications.

\*4. These are values after waterproofing and do not include plumb tolerance.

\*5. Pit depth in this drawing is obtained when floor recess is 3/4". When floor recess is greater than 3/4", extend pit depth as well. Max. floor recess is 1 1/4".

\*6. The minimum OH dimensions are obtained on condition that:

A. OH dimensions does not include the hoisting beams.

B. Please consult your structural engineer for hoisting beam sizing (typically a 6" to 8" beam plus 2" gap on top of the beam).

\*7. If occupied space below hoistway is provided, required hoistway dimensions will be changed. Contact a Mitsubishi Electric representative for details.

\*8. For California projects, please add 2" to OH dimensions.

\*9. If an elevator with a speed of 400ft/min or 500ft/min and a capacity of 4000lb is required, contact a Mitsubishi Electric representative for details.

\*10. Some of specifications require more than the value 9'-0" as a minimum height. Contact a Mitsubishi Electric representative if floor height is less than 9'-0".

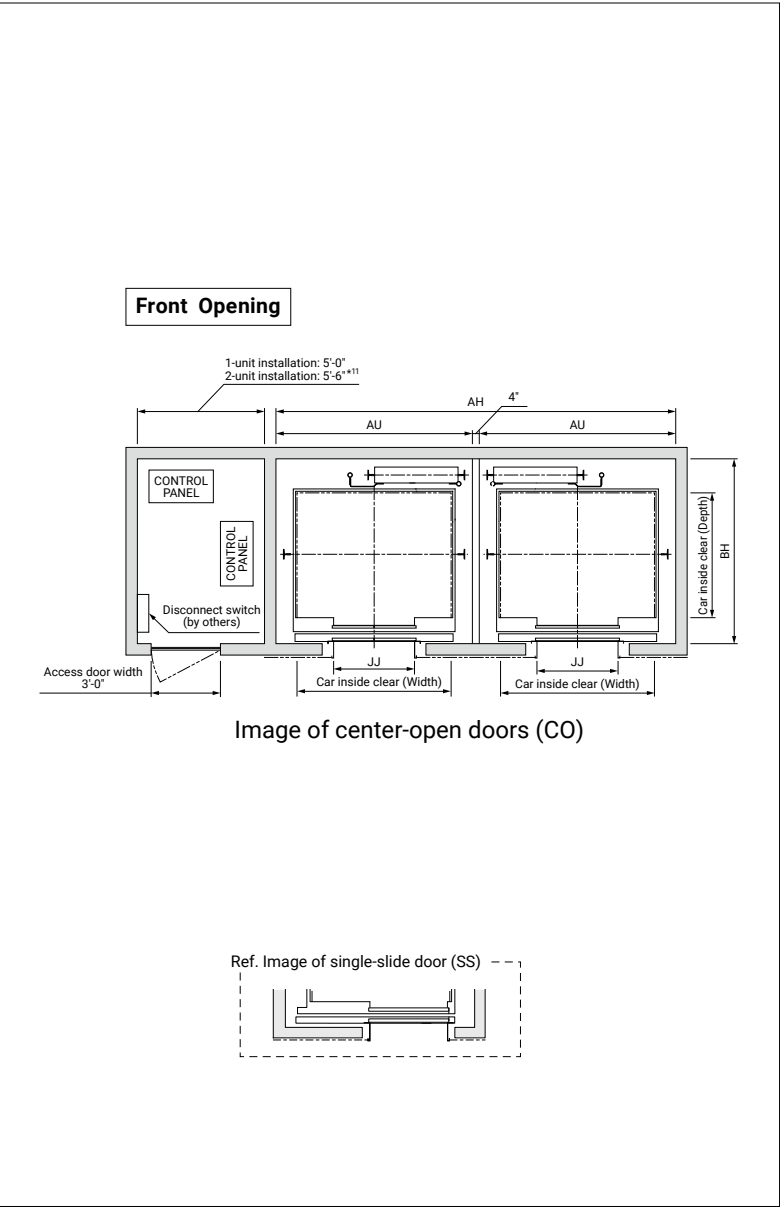
\*11. The dimension may vary depending on the specifications. Contact a Mitsubishi Electric representative for details.

Specifications

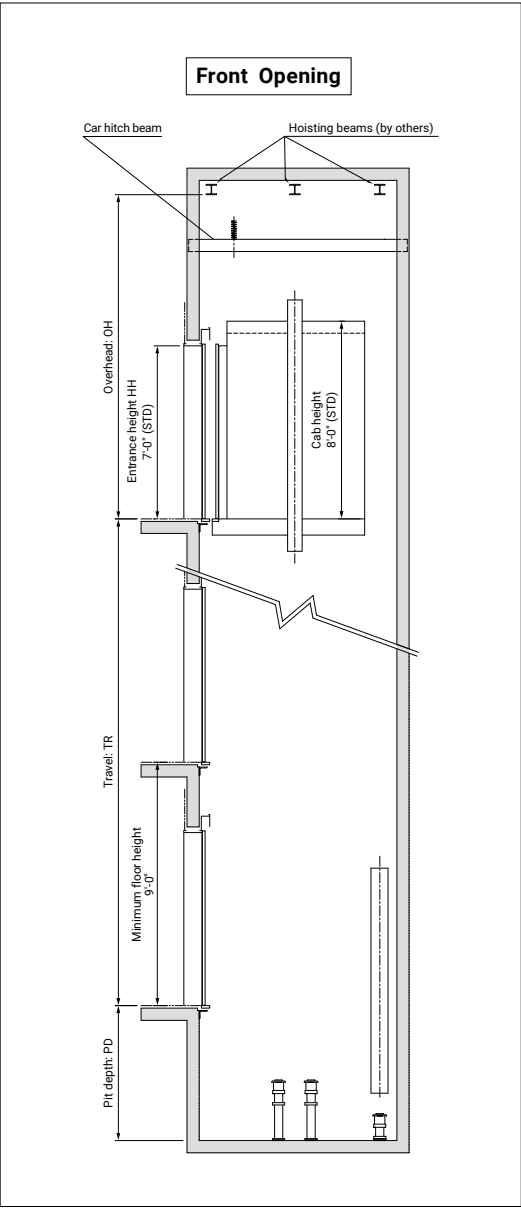
Rated speed		200ft/min	350ft/min	400ft/min*9	500ft/min*9
Maximum number of stops		10		24	
Maximum travel TR (ft)	2000 (lb)	75'-0"	98'-5"	-	
	2500~3500 (lb)				
	4000 (lb) *9	196'-10"		262'-5"	
Minimum floor height (ft)		9'-0" *10			

Basic layouts (example)

Hoistway plan



Hoistway section



BASIC SPECIFICATIONS\*1

Side counterweight arrangement / Capacity: 2500lb ~ 4000lb

Horizontal dimensions

Opening	Rated speed (ft/min)	Capacity (lb)	Door type*2	Car inside clear dimensions		Entrance width JJ (ft-in)	Minimum hoistway dimensions*3, 4		
				Width (ft-in)	Depth (ft-in)		Width*7		BH: Depth (ft-in)
							1-unit installation AU (ft-in)	2-unit installation AH (ft-in)	
Front	200 350 400 500	2500	SS	5'-10"	5'	3'-6"	9'-1"	18'-6"	6'-3 1/4"
			CO				8'-4 1/16"	17'-0 1/8"	
		3000	SS or CO	6'-8"	5'-4 3/4"		9'-1"	18'-6"	6'-8"
					Front & Rear				5'-8 3/16"
500	3500	5'-5 1/2"							7'-5 1/2"
Front	200 350	4000	CO	7'-8"	5'-4 3/4"	4'-0"	10'-1"	20'-6"	6'-8"
Front & Rear				7'-5"	5'-8 3/16"		9'-10"	20'-0"	7'-8 3/16"
				7'-8"	5'-5 1/2"		10'-1"	20'-6"	7'-5 1/2"

Vertical dimensions

<Rated Speed 200ft/min and 350ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		200ft/min			350ft/min		
		PD (ft-in)*5, 7		OH*6 (ft-in)	PD (ft-in)*5, 7		OH*6 (ft-in)
		Non-seismic	Seismic	Canopy height 8'-0"*8	Non-seismic	Seismic	Canopy height 8'-0"*8
Front	2500	5'-0 11/16"	5'-0 11/16"	14'-2 3/16"	5'-6 3/16"	5'-6 3/16"	14'-7 11/16"
	3000		5'-3"		6'-0 1/16"	6'-6"	
Front & Rear	3500		5'-8 15/16"			6'-11 7/8"	
Front	4000	5'-3"	6'-8 3/4"	14'-2 3/16"	5'-9 5/16"	6'-3 1/4"	14'-2 3/16"
Front & Rear							

<Rated Speed 400ft/min and 500ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		400ft/min			500ft/min		
		PD (ft-in)*5, 7		OH*6 (ft-in)	PD (ft-in)*5, 7		OH*6 (ft-in)
Non-seismic	Seismic		Non-seismic	Seismic			
Front	2500	6'-1 1/4"	7'-1 1/16"	14'-9 1/4"	7'-6 9/16"	8'-6 3/8"	15'-6 7/16"
	3000				8'-6 3/8"	9'-0 5/16"	
Front & Rear	3500	7'-1 1/16"	7'-7"				

Notes

\*1. The contents herein are standard specifications and layouts without counterweight safety. They are based on ASME A17.1 and applicable to a non-seismic parameter/zone and Seismic Design Category (SDC) A to D/seismic zone 0 to 4. Contact a Mitsubishi Electric representative for installation in a higher seismic area or any specification not shown in these tables.

\*2. SS: Single-slide door, CO: Center-open doors

\*3. Hoistway dimensions (AU, AH, BH, PD, OH) are for standard specifications.

\*4. These are values after waterproofing and do not include plumb tolerance.

\*5. Pit depth in this drawing is obtained when floor recess is 3/4". When floor recess is greater than 3/4", extend pit depth as well. Max. floor recess is 2". Contact a Mitsubishi Electric representative to check the seismic classification of your elevator.

\*6. The minimum OH dimensions are obtained on condition that:

A. OH dimensions does not include the hoisting beams.

B. Please consult your structural engineer for hoisting beam sizing (typically a 6" to 8" beam plus 2" gap on top of the beam).

\*7. If occupied space below hoistway is provided, required hoistway dimensions will be changed. Contact a Mitsubishi Electric representative for details.

\*8. Canopy height of 9'-0" or 10'-0" is also applicable. For the dimensions, contact a Mitsubishi Electric representative.

\*9. The maximum number of stops may be 32 stops or fewer depending on the car size. Contact a Mitsubishi Electric representative for details.

\*10. If the total of TR and OH dimensions exceed 295'-3", non-seismic zone is only applicable.

\*11. Some of specifications require more than the value 9'-0" as a minimum height. Contact a Mitsubishi Electric representative if floor height is less than 9'-0".

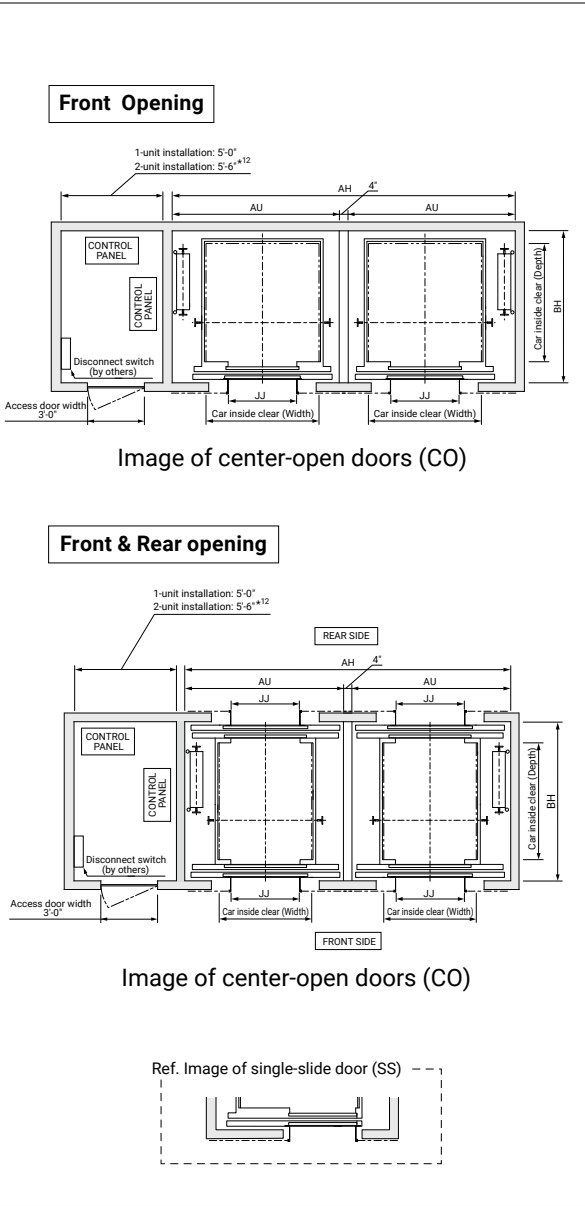
\*12. The dimension may vary depending on the specifications. Contact a Mitsubishi Electric representative for details.

Specifications

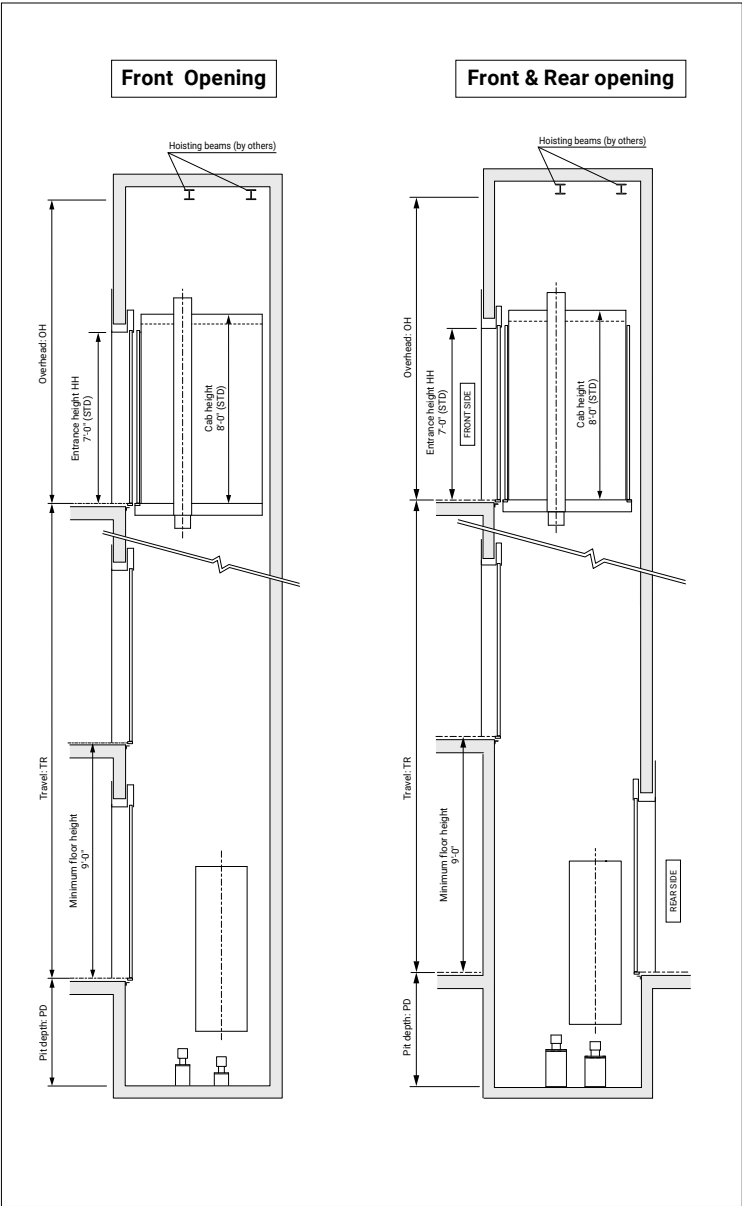
Rated speed		200ft/min	350ft/min	400ft/min	500ft/min
Maximum number of stops	2500~3500 (lb)	15	32*9		
	4000 (lb)		20	-	
Maximum travel TR (ft)	2500~3500 (lb)	196'-10"	344'-5"*10		
	4000 (lb)		196'-10"	-	
Minimum floor height (ft)		9'-0"*11			

Basic layouts (example)

Hoistway plan



Hoistway section





BASIC SPECIFICATIONS\*1

Side counterweight arrangement / Capacity: 4000lb ~ 5000lb

Horizontal dimensions

Opening	Rated speed (ft/min)	Capacity (lb)	Door type*2	Car inside clear dimensions		Entrance width JJ (ft-in)	Minimum hoistway dimensions*3, 4, 7	
				Width (ft-in)	Depth (ft-in)		Width	BH: Depth (ft-in)
Front	200 350	4000	2S	5'-8"	7'-3 1/4"	4'-0"	8'-7 1/2"	17'-7"
		4500			7'-11 1/4"			
		5000			8'-6 1/4"			
		4500		5'-10"	8'-4 1/4"	4'-6"	8'-9 1/2"	17'-11"
Front & Rear	400 500	4500	CO	5'-8"	8'-0"	4'-0"	8'-7 1/2"	17'-7"
		5000			8'-7"			
		4000*9			5'-10"	4'-6"	8'-9 1/2"	17'-11"
		4000*9		7'-5"	5'-8 3/16"	4'-0"	10'-6"	21'-4"

Vertical dimensions

<Rated Speed 200ft/min and 350ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		200ft/min			350ft/min		
		PD (ft-in)*5, 7	OH*6 (ft-in)		PD (ft-in)*5, 7	OH*6 (ft-in)	
Front	4000	5'-8"	Canopy height 8'-0"	Canopy height 9'-6"	6'-1"	15'-5"	16'-10 11/16"
	4500						
	5000	6'-1"	15'-1"	16'-6 11/16"	6'-2"*8	15'-5"	16'-10 11/16"
	4500	5'-8"					
Front & Rear	4500	5'-8"	15'-2"	16'-7 11/16"	6'-1"	15'-10"	17'-3 11/16"
	5000	6'-1"					

<Rated Speed 400ft/min and 500ft/min>

Opening	Capacity (lb)	Minimum hoistway dimensions*3					
		Rated speed					
		400ft/min			500ft/min		
		PD (ft-in)*5, 7	OH*6 (ft-in)		PD (ft-in)*5, 7	OH*6 (ft-in)	
Front & Rear	4000*9	7'-6 11/16"	Canopy height 8'-0"	Canopy height 9'-6"	8'-8 1/2"	17'-1 3/4"	18'-7 7/16"
		7'-6 11/16"	16'-3 7/8"	17'-9 5/8"	8'-8 1/2"	17'-1 3/4"	18'-7 7/16"

Notes

\*1. The contents herein are standard specifications and layouts without counterweight safety. They are based on ASME A17.1 and applicable to a non-seismic parameter/zone and Seismic Design Category (SDC) A to D/seismic zone 0 to 4. Contact a Mitsubishi Electric representative for installation in a higher seismic area or any specification not shown in these tables.

\*2. 2S: 2-Speed side-open doors, CO: Center-open doors

\*3. Hoistway dimensions (AU, AH, BH, PD, OH) are for standard specifications.

\*4. These are values after waterproofing and do not include plumb tolerance.

\*5. Pit depth in this drawing is obtained when floor recess is 3/4".

When floor recess is greater than 3/4", extend pit depth as well. Max. floor recess is 1 1/4".

\*6. The minimum OH dimensions are obtained on condition that:

A. OH dimensions does not include the hoisting beams.

B. Please consult your structural engineer for hoisting beam sizing (typically a 6" to 8" beam plus 2" gap on top of the beam).

\*7. If occupied space below hoistway is provided, required hoistway dimensions will be changed. Contact a Mitsubishi Electric representative for details.

\*8. If the travel is below 98'-5", some reduction of pit depth is available. Contact a Mitsubishi Electric representative for details.

\*9. If an elevator with a capacity of 4000lb and front and rear openings is required, contact a Mitsubishi Electric representative for details.

\*10. Some of specifications require more than the value 9'-0" as a minimum height. Contact a Mitsubishi Electric representative if floor height is less than 9'-0".

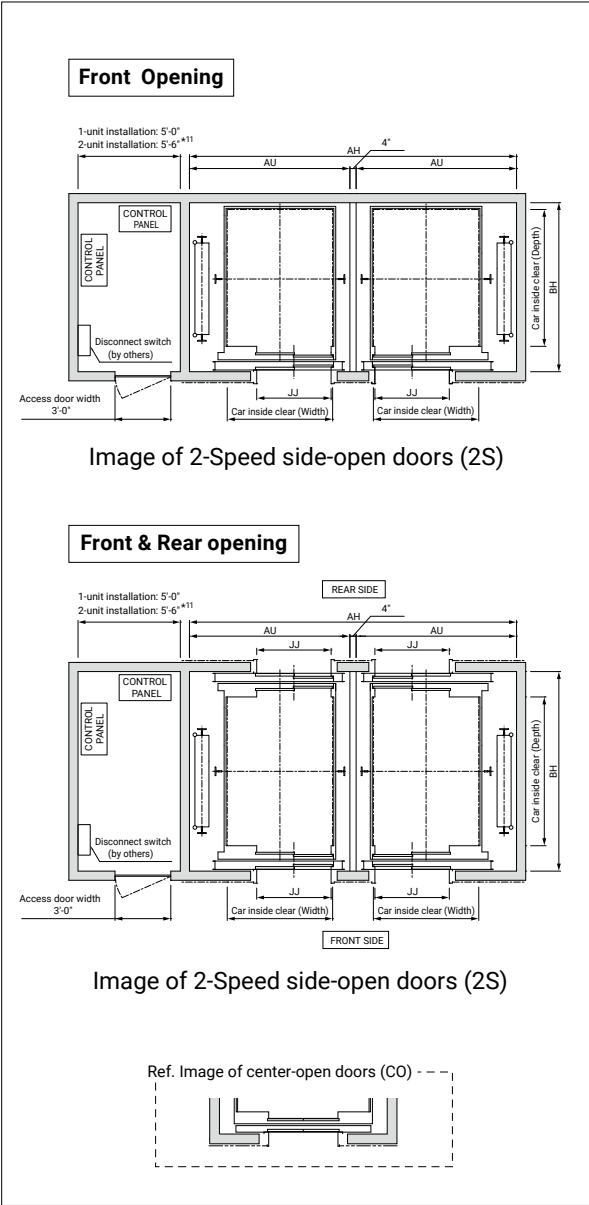
\*11. The dimension may vary depending on the specifications. Contact a Mitsubishi Electric representative for details.

Specifications

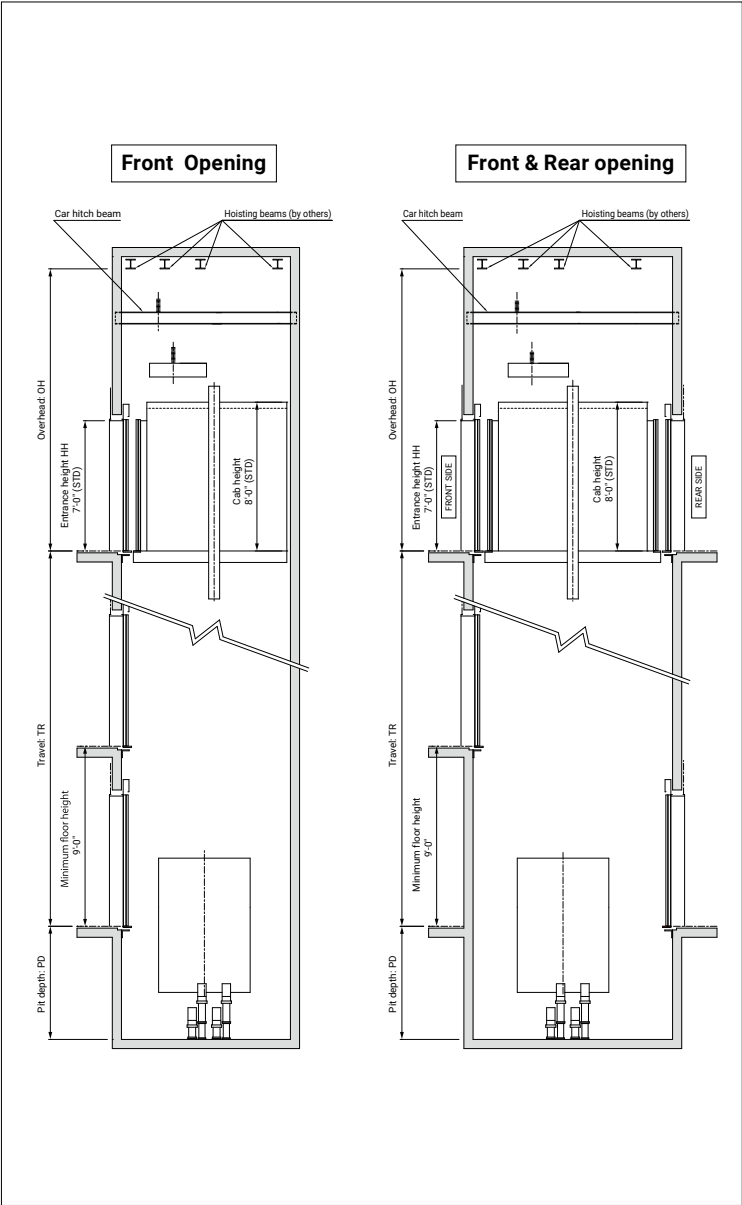
Rated speed	200ft/min	350ft/min	400ft/min *9	500ft/min *9
Maximum number of stops	24			
Maximum travel TR (ft)	196'-10"		262'-5"	
Minimum floor height (ft)	9'-0" *10			

Basic layouts (example)

Hoistway plan



Hoistway section



# 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:
- Architectural finishing of 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.
  - Provisions for 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.
  - 3-phase, horsepower rated, lockout type, fused disconnect or circuit breaker, including provision of 3-phase electrical service to elevators.
  - Elevator group control disconnect switch, if applicable.
  - Control room lighting and duplex outlets.
  - Power source for seismic switch, if applicable.
  - 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 during installation work and test operations.
  - Test provisions and subsequent alteration as required, 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.
  - 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.
  - Divider beams and structural attachment points for rail brackets are by others and will be located as needed on Mitsubishi Electric shop drawings.
  - Temporary work platform overhead.
  - Smoke detectors in the hoistway near the machines, as required by code.

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

## Elevator Site Requirements

- The temperature of the elevator hoistway and control panel room shall be above 23°F (-5°C) and below 104°F (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 elevator hoistway.
  - c. 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

Contact a Mitsubishi Electric representative for more information such as coordination of related work items, site requirements, and ordering.

### Trademark Rights

PURER(I)DE and ReadyConnect are trademarks of Mitsubishi Electric Corporation.  
Diamond Trac, Quality in Motion, ΣAI and DOAS are registered trademark of Mitsubishi Electric Corporation.





## 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.



**Mitsubishi Electric US, Inc. Elevator/Escalator Division**  
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[www.MitsubishiElectric.com/elevator](http://www.MitsubishiElectric.com/elevator)

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