MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow

Quality in Motion™

PASSENGER ELEVATORS
(COMPACT MACHINE ROOM SYSTEM)
Series-IP/AP Version2
Series-IP

NexWay-S

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

Quality in Motion™

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.

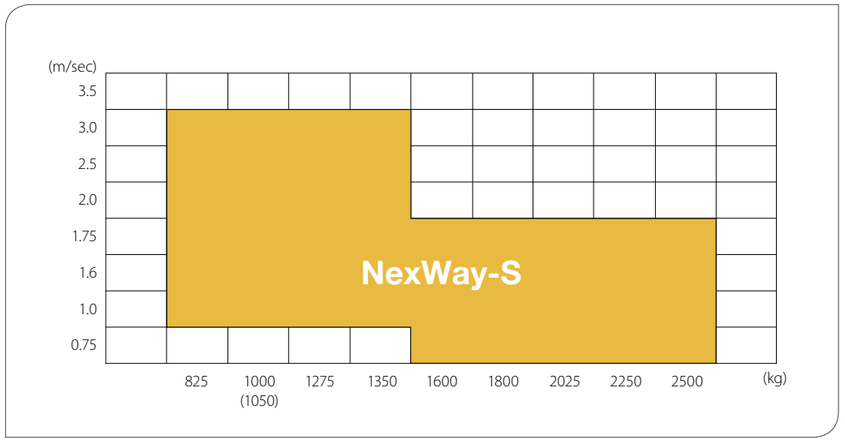
We strive to be green in all of our business activities.

We take every action to reduce environmental burden during each process of our elevators' and escalators' lifecycle.

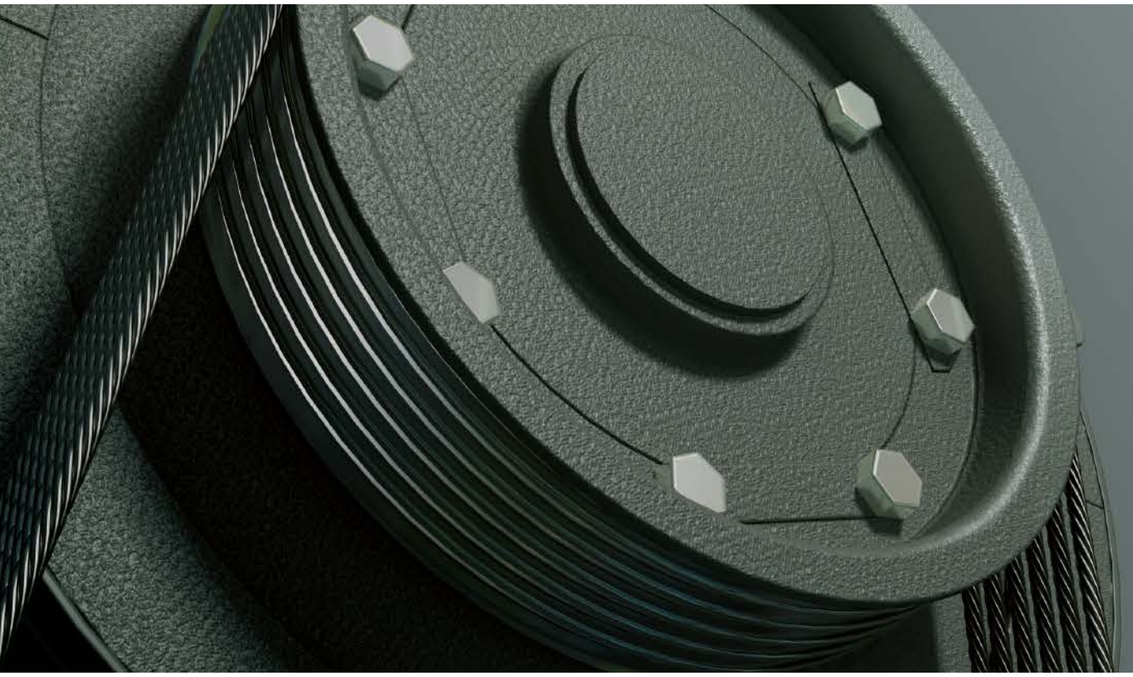
Contents

Our Global Standards for Compact Machine Room Elevators

Application



Note:
The applicable range of the rated capacity may differ depending on the manufacturing factory, please consult our local agents for details.



Green Technology

SUSTAINABLE ENERGY USE

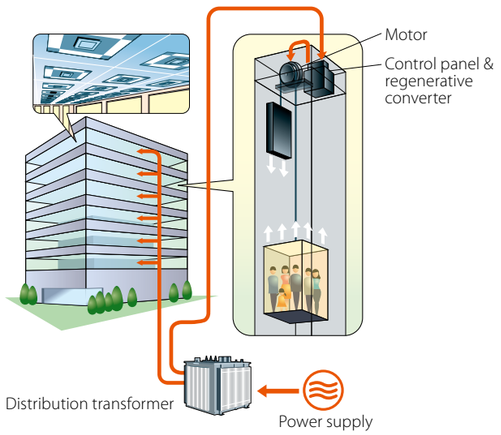
Mitsubishi Electric's leading-edge technologies have made it possible for elevators to conserve energy. Our Regenerative Converter makes the most of power generated by the traction machine. Additionally, thanks to the joint-lapped core in permanent magnet (PM) motor and energy-saving features, the elevators use energy more wisely and efficiently.

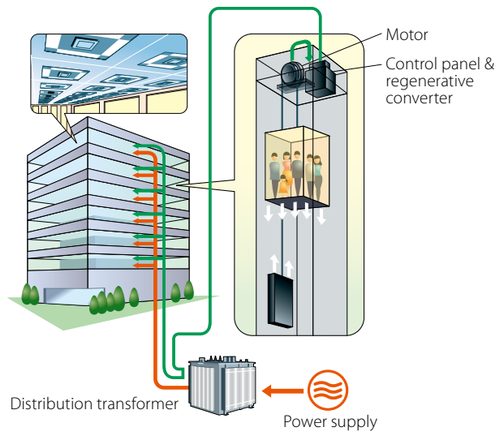
Regenerative Converter

Efficient use of power

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 approximately 35%.*
In addition, the regenerative converter has the effect of decreasing harmonic currents.

Note:
*The value is a reference datum and may increase or decrease in accordance with actual conditions of use and elevator specifications.





Joint-lapped Core in Permanent Magnet (PM) Motor

Smaller carbon footprint

The joint-lapped core built in the PM motor of the traction machine features flexible joints. The iron core can be like a hinge, which allows coils to be wound around the core more densely, resulting in improved motor efficiency and compactness. High-density magnetic field is produced, enabling lower use of energy and resources and reduced CO_2 emissions.

Energy-saving Features

Curbing energy consumption

Mitsubishi Electric offers features that help to reduce the energy consumption of elevators.

Energy-saving Operation
– Number of Cars: ESO-N (Optional for ΣAI-22)

The number of service cars is automatically reduced to some extent without affecting passenger waiting time.

Energy-saving Operation
– Allocation Control: ESO-W (ΣAI-2200C only)

Based on each elevator's potential energy consumption, the system selects the elevator that best balances operational efficiency and energy consumption.

Car Light/Fan Shut Off
– Automatic: CFO-A/CLO-A

The car lighting/ventilation fan is automatically turned off if there are no calls for a specified period.

Variable Traveling Speed Elevator System

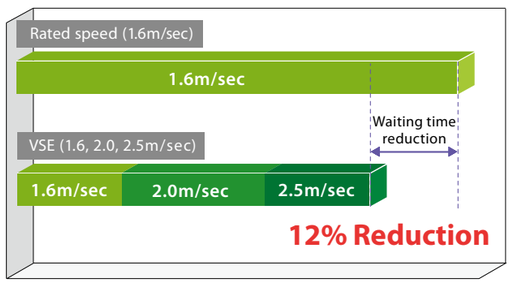
TIME-SAVING

With Mitsubishi Electric's industry-first Variable Traveling Speed Elevator System, an elevator can travel faster than its rated speed according to the number of passengers, ultimately reducing waiting and traveling time.

Variable Traveling Speed Elevator System: VSE (Optional)*

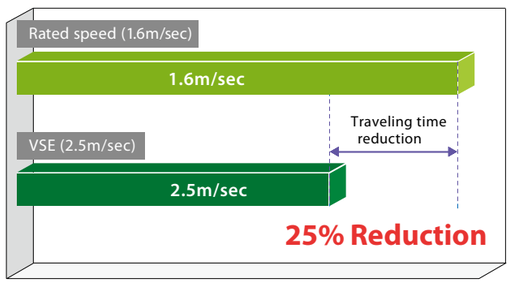
The Variable Traveling Speed Elevator System allows elevators to travel faster than their rated speed depending on the number of passengers in the car (rapid mode). When the weight is well-balanced between the car and the counter-weight, the traction machine does not need its full power to make the elevator travel at the rated speed. Thus, utilizing the unused power of the traction machine, the elevator can travel faster. Its efficient transport reduces frustratingly long waiting and traveling time. VSE is a solution for users seeking time-savings in elevator travel.

Waiting Time Reduction



According to Mitsubishi Electric's simulation, waiting time can be reduced up to approximately 12% when VSE is applied.

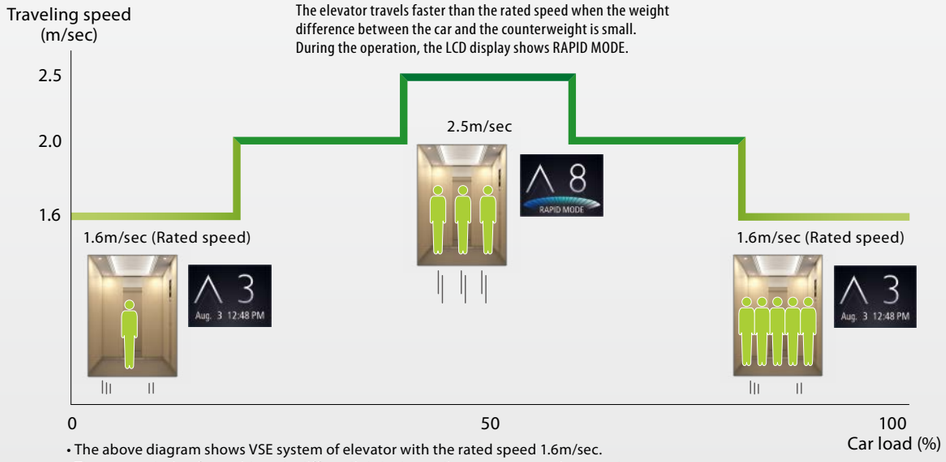
Traveling Time Reduction



Traveling time can be reduced by approximately 25% when the elevator travels from the bottom to the top floor directly under rapid mode in VSE.

(Conditions)
Travel: 36m, Floor height: 4.0m, 10 floors, Car load: 50%

Note:
*The Variable Traveling Speed Elevator System is applicable to elevators with rated speeds of 1.6m/sec, 1.75m/sec and 2.0m/sec and the rated capacity of 825kg to 1350kg.

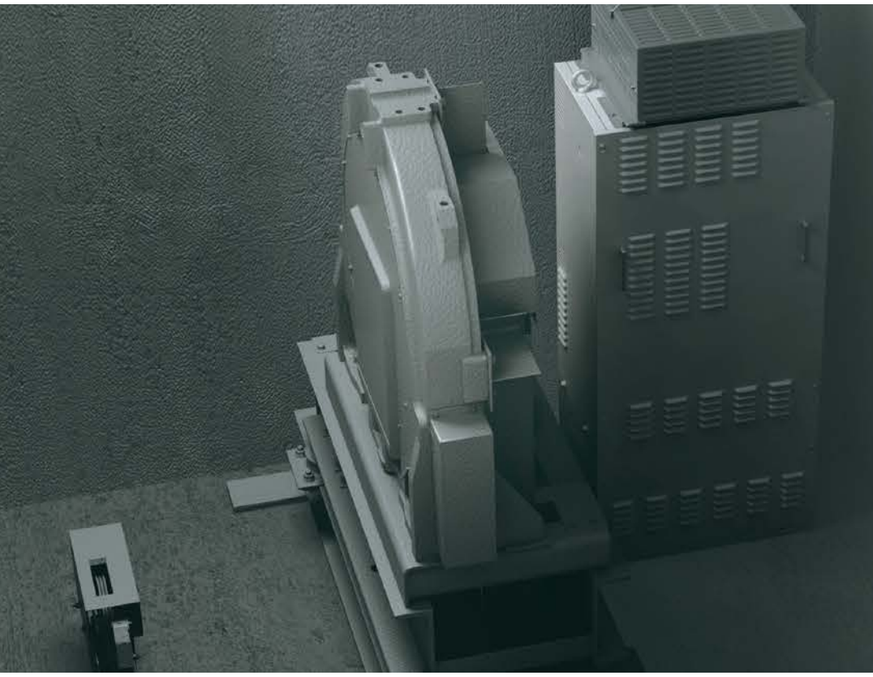


- The above diagram shows VSE system of elevator with the rated speed 1.6m/sec.
- The screen design for rapid mode differs slightly depending on car operating panel type.

Maximum Speed and Car Load

Rated speed	Car load 0%	Car load 50%			Car load 100%
1.6m/sec	1.6m/sec [1 person]	2.0m/sec [2-4 persons]	2.5m/sec [5-9 persons]	2.0m/sec [10-11 persons]	1.6m/sec [12-13 persons]
1.75m/sec	1.75m/sec [1 person]				1.75m/sec [12-13 persons]
2.0m/sec	2.0m/sec [1-2 persons]		2.5m/sec [3-10 persons]		2.0m/sec [11-13 persons]

[Number of passengers in the car when the maximum number of passengers is 13.]

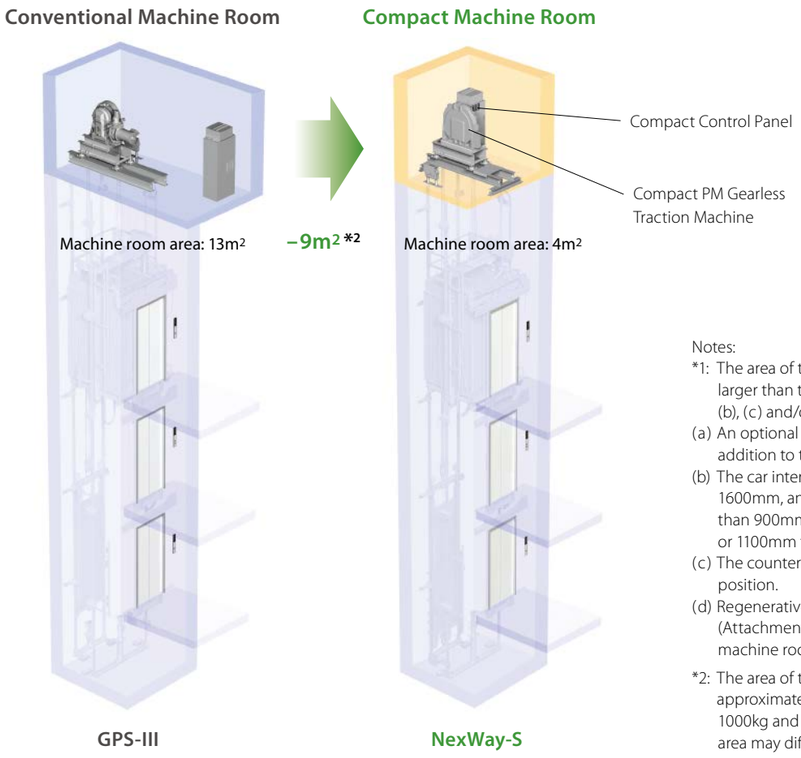


Compact Machine Room

SPACE-SAVING

Through the development of the Compact Gearless Traction Machine and Compact Control Panel, Mitsubishi Electric has successfully reduced the machine room area to that of hoistway*1, where the machine room used to require an area twice as large as that of hoistway. It offers the most advanced elevator features without requiring a large machine room, thus maximizing the use of building space.

Example of Space-saving



Notes:
*1: The area of the machine room may have to be larger than that of the hoistway in case of (a), (b), (c) and/or (d) below.
(a) An optional feature that requires a panel(s), in addition to the control panel, is requested.
(b) The car interior width (AA) is less than 1600mm, and the entrance width (JJ) is less than 900mm for 2-panel center opening (CO) or 1100mm for 2-panel side opening (2S).
(c) The counterweight is installed in a side drop position.
(d) Regenerative convertor (PCNV) is NOT required. (Attachment panel for resister is provided into machine room in addition to the control panel)

*2: The area of the machine room can be reduced approximately 9m2 when the rated capacity is 1000kg and the rated speed is 1.75m/sec. The area may differ depending on the conditions.

Compact PM Gearless Traction Machine

Mitsubishi Electric was the first company to replace induction motors with its highly sophisticated PM (permanent magnet) motors for high-speed and super high-speed elevators.

The extremely thin PM motor manufactured using Mitsubishi Electric's unique stator core technology –Joint-lapped Core* in Permanent Magnet (PM) Motor– has dramatically reduced not only the size of traction machines but also energy consumption.

Furthermore, the PM motor suppresses harmonic noise and torque ripple, providing greater riding comfort.

Note:
*Please refer to page 4 for details.

Compact Control Panel

The control panel that drives the PM motor has also been reduced in size. Incorporating the most advanced, low-loss IGBT (Insulated Gate Bipolar Transistor) into an optimal design, the power unit has decreased in size significantly, making the control panel itself smaller than previous models. The functions and performance of this Compact Control Panel remain unchanged.

The VVVF Inverter Control delivers smooth, high-precision control of the traction machine. A combination of these state-of-the-art components contributes to significant power savings, while achieving the desired functions and performance of the control panel.

Group Control

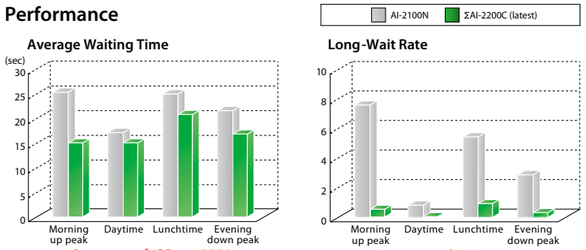
EFFICIENT TRANSPORTATION

Mitsubishi Electric's breakthrough AI Neural Network* technology in elevator control enhances transport efficiency and reduces passenger waiting time through optimum car allocation, which allows elevators to use energy effectively. Two basic group control systems offer a variety of innovative group control features.

Group control systems	Suitable building size	Number of cars in a group
ΣAI-22 system	Small to medium	3 to 4 cars
ΣAI-2200C system	Large (Especially buildings with dynamic traffic conditions)	3 to 8 cars

The features introduced on these pages are applicable to ΣAI-2200C only. Please refer to page 13 and 14, and the ΣAI-2200C brochure for other features and details.

Performance

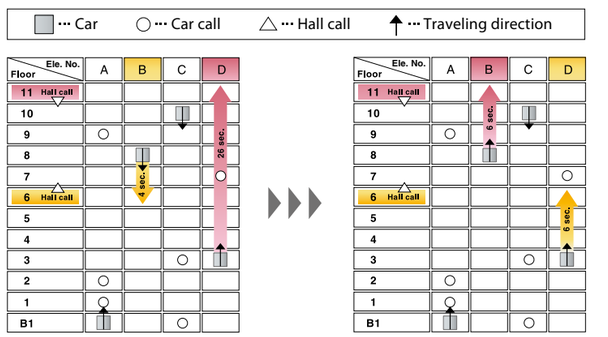


Note: Simulated with 6 cars, 20 persons each at 2.5m/sec for 15 stops.

Cooperative Optimization Assignment

Forecasts a near-future hall call to reduce long waits

When a hall call is registered, the algorithm assumes 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.



AI-2100N
[A hall call is registered at 6th Fl.]
Allocates the closest car B.
[Another hall call is soon registered at 11th Fl.]
Allocates D, resulting in long wait of 26 sec.

ΣAI-2200C (Latest)
[A hall call is registered at 6th Fl.]
Allocates D, which is moving upward.
[Another hall call is soon registered at 11th Fl.]
Allocates B, which immediately arrives at the floor.

Note:
*Neural Network is a mathematical model that emulates the structure of the nerves and cells of the human brain and its information processing mechanism.

Dynamic Rule-set Optimizer

Selects optimum car allocation through rule-set simulations

Based on real traffic data, passenger traffic is predicted every few minutes. According to the prediction, real-time simulation selects the best rule-set (multiple rules have been set as car allocation patterns), which optimizes transport efficiency.

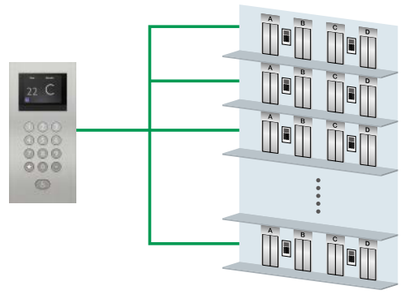
Destination Oriented Allocation System: DOAS (Optional)

Allocates 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.

Standard arrangement of hall fixtures (No hall lantern* is provided.)
Cars receive destination information from all floors to provide the best service for more complex traffic conditions throughout the day.

Example of hall arrangement



Note:
* Hall lanterns are available as optional.

Standard Design

Car

Ceiling: S00

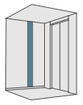
Ceiling: Painted steel sheet (Y033)
with a milky white resin lighting cover
Lighting: Central lighting

Car Design Example

Walls	Stainless-steel, hairline-finish
Transom panel	Stainless-steel, hairline-finish
Doors	Stainless-steel, hairline-finish
Front return panels	Stainless-steel, hairline-finish
Kickplate	Aluminum
Flooring	PR803: Gray
Car operating panel	CBV1-N712

Car operating panel

For side wall



CBV1-N712*1

Segment LED indicators*2
Tactile button with yellow-orange lighting

Hall

Narrow Jamb: E-102

Hall Design Example

Jamb	Stainless-steel, hairline-finish
Doors	Stainless-steel, hairline-finish
Hall position indicator and button	PIV1-A1010N*3 Boxless

Hall position indicators and buttons

With plastic case*3

PIV1-A1010N Boxless　　PIV1-A1020N Boxless

Segment LED indicators*2
Tactile button with yellow-orange lighting

Actual colors may differ slightly from those shown.
Please refer to the design guide for details and other designs.

Notes:
*1: Maximum number of floors: 30 floors
*2: Some letters of the alphabets are not available. Please consult our local agents for details.
*3: These types are not applicable to elevators complying with EN81-70.

NexWay-S Exclusive Finish (750kg to 1350kg only)

Shiny Vibration Finish for Stainless-steel (Optional)

Shiny Vibration, a highly durable lustrous finish, has been added exclusively for the NexWay-S lineup. The stainless-steel finish presents a soft natural texture that impresses in appearance while protecting the surface from showing scratches.

Image of finish

Car

Car Design Example

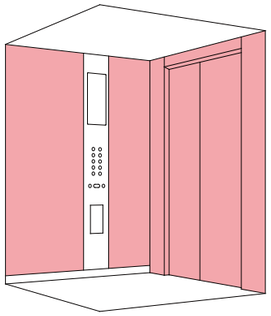
Walls	Stainless-steel, shiny vibration
Transom panel	Stainless-steel, shiny vibration
Doors	Stainless-steel, shiny vibration
Front return panels	Stainless-steel, hairline-finish (SUS-HL)
Kickplate	Aluminum
Flooring	PR803: Gray
Car operating panel	CBV1-N712

Hall

Hall Design Example

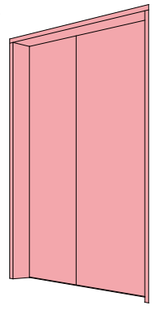
Jamb	Stainless-steel, shiny vibration
Doors	Stainless-steel, shiny vibration
Hall position indicator	PIH-D417
Hall button	HBV1-A1010N

Applicable parts of car*



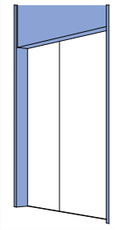
- Transom panel
- Walls
- Doors
- Front return panels

Applicable parts of hall*



- Jamb
- Doors

Shiny vibration finish is not applicable to a jamb with transom panel.



Note:
* Shiny vibration finish is not applicable to parts not listed.

Actual colors may differ slightly from those shown.

Basic Specifications (825kg to 1350kg)

Horizontal Dimensions 1-Door 1-Gate

Code number	Number of persons	Rated capacity (kg)	Door type	Counter-weight position	Car internal dimensions (mm) AAxBB	Entrance width (mm) JJ	Minimum hoistway dimensions (mm) AHxBH *1		
							Rated speed (m/sec) *2		
							1.0/1.6/1.75/2.0/2.5	2.5	3.0
							Travel (m) TR		
							TR≦120	120<TR≦150	TR≦150
P11	11	825	CO	Rear	1400x1350	900	2050x1905	2050x1935	1970x2035
				Side			2175x1715		
P13	13	1000		Rear	1600x1400		2000x1955	2030x2005	2030x2085
				Side			2290x1755		
P14	14	1050	2S		1100x2100		1790x2510 *3		
P17	17	1275	CO	Rear	2000x1400	1100	2400x2005	2430x2005	2430x2085
				Side			2690x1785		
			2S		1200x2300		1975x2710		
P18	18	1350	CO	Rear	2000x1500		2400x2105	2430x2105	2430x2185
				Side			2690x1885		

Horizontal Dimensions 1-Door 2-Gate

Code number	Number of persons	Rated capacity (kg)	Door type	Counter-weight position	Car internal dimensions (mm) AAxBB	Entrance width (mm) JJ	Minimum hoistway dimensions (mm) AHxBH *1	
							Rated speed (m/sec) *2	
							1.0	1.6~2.5
							Travel (m) TR	
							TR≦60	TR≦80 or TR≦105
P10	10	800	CO	Side	1400x1300	900	2175x1840	
P13	13	1000			1600x1400		2290x1940	
P14	14	1050	2S		1100x2100		1790x2754 *3	
P17	17	1275	CO		2000x1380	1100	2690x1920	
			2S		1200x2250		1975x2954	
P18	18	1350	CO		2000x1450		2690x1990	

[Terms of the table]
- This table shows standard specifications with the fireproof landing door and without counterweight safety. Please consult our local agents for other specifications.
- CO: 2-panel center opening doors, 2S: 2-panel side sliding doors.
- Minimum hoistway dimensions (AH and BH) shown in the table are after waterproofing of the pit and do not include plumb tolerance.

Notes:
*1: When the counterweight is installed in a side drop position and the door type is CO, a larger machine room depth (BH) is required. Please consult our local agents.
*2: The minimum hoistway dimensions (AH x BH) shown in the table above is a space for a car when two or more cars are located in the same hoistway.
If only one car is located in the hoistway and the rated speed is 2.5 m/sec or 3.0 m/sec, the hoistway dimensions are different from those shown.
Please consult our local agents for details.
*3: The width of the machine room becomes larger by 50mm because of the counterweight installed in a side drop position.

Vertical Dimensions 1-Door 1-Gate & 1-Door 2-Gate

Rated speed (m/sec)	Maximum travel (m) TR	Maximum number of stops	Counter-weight position	Minimum overhead (mm) OH		Minimum pit depth (mm) PD		Minimum machine room clear height (mm) HM	Minimum floor to floor height (mm)
				Rated capacity (kg)					
				~1050 (kg)	~1350 (kg)	~1050 (kg)	~1350 (kg)		
1.0	TR≦60	50	Rear	4240	4410	1360	1410	2200*1	2600*2
			Side						
1.6	TR≦110		Rear	4400	4570	1440	1490		
			Side						
1.75			Rear						
			Side						
2.0	TR≦120		Rear	4490	4660	1500	1550		
			Side						
2.5	TR≦120		Rear	4730	4900	1740	1790		
			Side						
	120<TR≦150		Rear			2160	2210		
3.0	TR≦150		Rear	5090	5260	2430	2480		

[Terms of the table]
- This table shows standard specifications without counterweight safety. Please consult our local agents for other specifications.

Notes:
*1: Some specifications require more than 2200mm as a minimum machine room height. Please consult our local agents for the appropriate machine room height.
*2: Some specifications require more than 2600mm as a minimum floor height. Please consult our local agents if the floor height is less than entrance height HH + 700mm, and the elevator is 1-Door 2-Gate.

Specifications for Variable Traveling Speed Elevator System (Optional)

1-Door 1-Gate & 1-Door 2-Gate

Rated speed (m/sec)	Traveling speeds (m/sec)	Minimum overhead (mm) OH		Minimum pit depth (mm) PD	
		Rated capacity (kg)			
		~1050 (kg)	~1350 (kg)	~1050 (kg)	~1350 (kg)
1.6	1.6/2.0/2.5	4730	4900	1740	1790
1.75	1.75/2.0/2.5				
2.0	2.0/2.5				

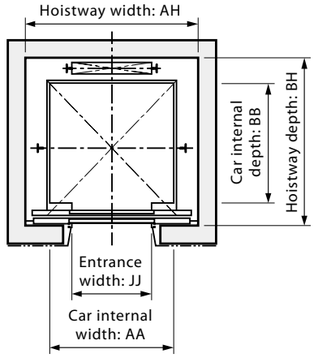
[Terms of the table]
- This table shows standard specifications without counterweight safety. Please consult our local agents for other specifications.
- The Variable Traveling Speed Elevator System (VSE) is applicable to the elevators with rated speeds of 1.6m/sec, 1.75m/sec and 2.0m/sec.
- Except minimum overhead and pit depth dimensions (OH and PD), specifications shown in tables, "Horizontal Dimensions" and "Vertical Dimensions", on the page 15 to 16 are applicable to the Variable Traveling Speed Elevator System.

Dimensional information shown here conforms to EN81-20/50 2014.

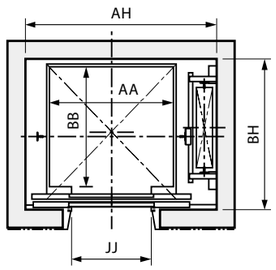
Basic Specifications (825kg to 1350kg)

1-Door 1-Gate

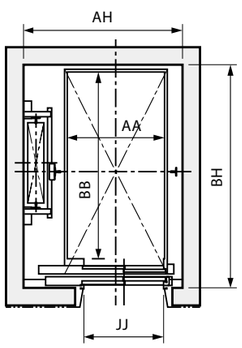
Hoistway Plan



Shown for CO doors
Counterweight rear drop

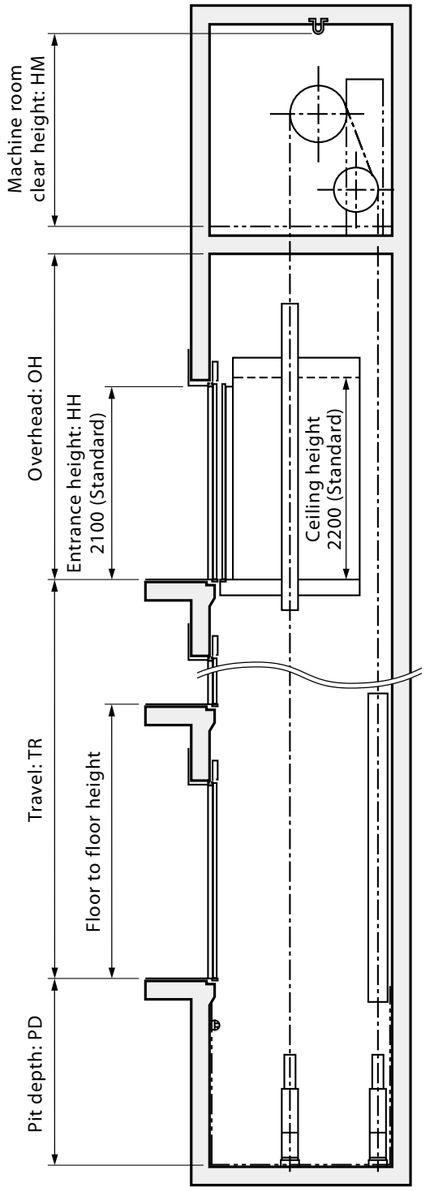


Shown for CO doors
Counterweight side drop



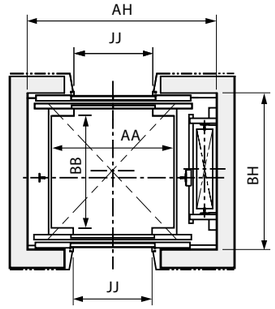
Shown for 2S doors
Counterweight side drop

Hoistway Section

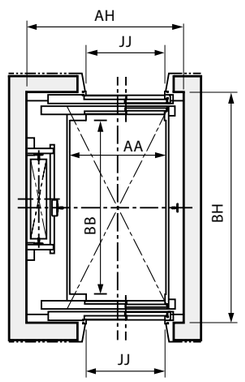


1-Door 2-Gate

Hoistway Plan

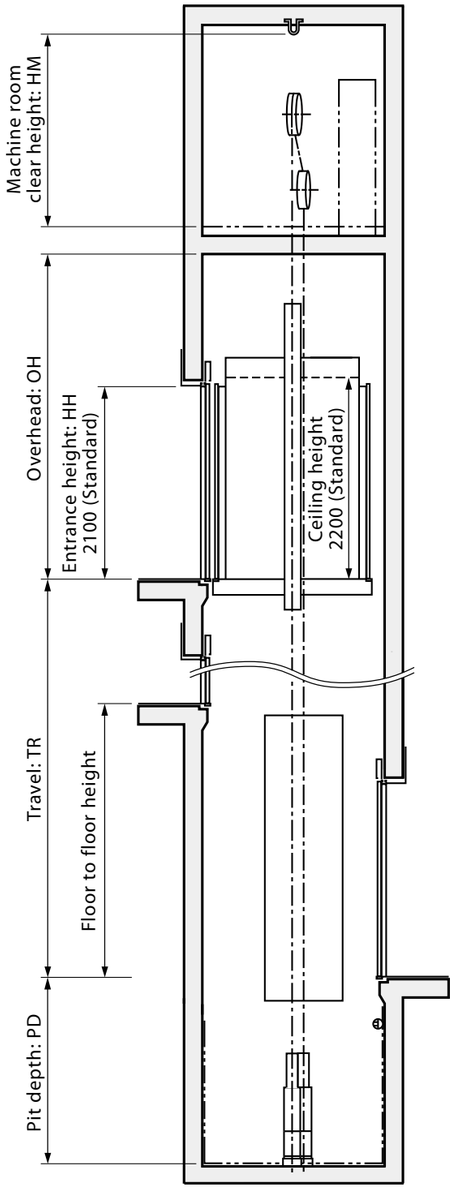


Shown for CO doors
Counterweight side drop



Shown for 2S doors
Counterweight side drop

Hoistway Section



Basic Specifications (1600kg to 2500kg)

Horizontal Dimensions 1-Door 1-Gate

Code number	Number of persons	Rated capacity (kg)	Door type	Counter-weight position	Car internal dimensions (mm) AAxBB	Entrance width (mm) JJ	Minimum hoistway dimensions (mm) AHxBH
P21	21	1600	CO	Rear	2000x1700	1100	2540x2425
P24	24	1800			2100x1800		2640x2605
P27	27	2025			2100x1950	1200	2640x2755
P30	30	2250			2300x1950		2840x2750
P33	33	2500			2300x2100		2840x2900

[Terms of the table]
- This table shows standard specifications with the fireproof landing door and without counterweight safety. Please consult our local agents for other specifications.
- CO: 2-panel center opening doors
- Minimum hoistway dimensions (AH and BH) shown in the table are after waterproofing of the pit and do not include plumb tolerance.

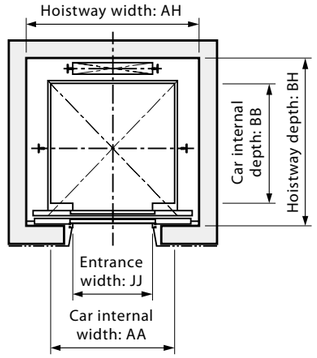
Vertical Dimensions 1-Door 1-Gate

Rated speed (m/sec)	Maximum travel (m) TR	Maximum number of stops	Counter-weight position	Minimum overhead (mm) OH		Minimum pit depth (mm) PD	Minimum machine room clear height (mm) HM	Minimum floor to floor height (mm)
				Rated capacity (kg)				
				1350<Cap.≦2250	2250<Cap.≦2500	1350<Cap.≦2500		
0.75	80	32	Rear	4750	4750	1550	2500*1	2600*2
1.0				4850	4750	1600		
1.6				4900	4900	1600		
1.75				4950	4950	1650		

[Terms of the table]
- This table shows standard specifications without counterweight safety. Please consult our local agents for other specifications.

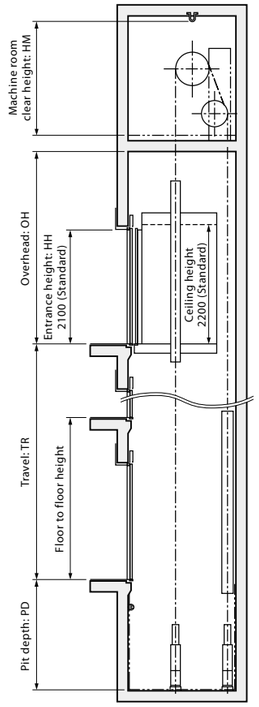
Notes:
*1: Some specifications require more than 2500mm as a minimum machine room height. Please consult our local agents for the appropriate machine room height.
*2: Some specifications require more than 2600mm as a minimum floor height. Please consult our local agents if the floor height is less than entrance height HH + 700mm, and the elevator is 1-Door 2-Gate.

Hoistway Plan



Shown for CO doors
Counterweight rear drop

Hoistway Section



Dimensional information shown here conforms to EN81-20/50 2014.

Features (1/2)

Feature	Abbreviation	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ EMERGENCY OPERATIONS AND FEATURES					
Building Management System-GateWay	BMS-GW	Each elevator's status and operation can be monitored and controlled using a building management system which manages various facilities in the building via the interface for the elevator system.	◎	◎	◎
Earthquake Emergency Return	EER-P EER-S	Upon activation of primary and/or secondary wave seismic sensors, all cars stop at the nearest floor, and park there with the doors open to facilitate the safe evacuation of passengers.	◎	◎	◎
Emergency Car Lighting	ECL	Car lighting which turns on immediately when power fails, providing a minimum level of lighting within the car. (Choice of dry-cell battery or trickle-charge battery.)	Ⓢ	Ⓢ	Ⓢ
Fire Emergency Return	FER	Upon activation of a key switch or a building's fire alarm, all calls are canceled, all cars immediately return to a specified evacuation floor and the doors open to facilitate the safe evacuation of passengers.	◎	◎	◎
Firefighters' Emergency Operation	FE	During a fire, when the fire operation switch is activated, the car calls of a specified car and all hall calls are canceled and the car immediately returns to a predetermined floor. The car then responds only to car calls which facilitate fire-fighting and rescue operation.	◎	◎	◎
MelEye Mitsubishi Elevators & Escalators Monitoring and Control System	WP-W	Each elevator's status and operation 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	Upon power failure, a car equipped with this function automatically moves and stops at the nearest floor using a rechargeable battery, and the doors open to facilitate the safe evacuation of passengers. (Maximum allowable floor-to-floor distance: 12 meters [Rated speed 1.0m/sec], 20meters [Rated speed 1.6m/s or faster])	◎	◎	◎
Operation by Emergency Power Source — Automatic	OEPS	Upon power failure, predetermined car(s) uses the building's emergency power supply to move to a specified floor, where the doors then open to facilitate the safe evacuation of passengers. After all cars have arrived, the predetermined car(s) resume normal operation.	◎	◎	◎
■ DOOR OPERATION FEATURES					
Automatic Door-open Time Adjustment	DOT	The time doors are open will automatically be adjusted 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 doors, is monitored to adjust the door speed, thereby making the door speed consistent throughout all floors.	Ⓢ	Ⓢ	Ⓢ
Door Load Detector	DLD	When excessive door load has been detected while opening or closing, the doors immediately reverse.	Ⓢ	Ⓢ	Ⓢ
Door Nudging Feature — With Buzzer	NDG	A buzzer sounds and the doors slowly close when they have remained open for longer than the preset period. With the AAN-B or AAN-G feature, a beep and voice guidance sound instead of the buzzer.	Ⓢ	Ⓢ	Ⓢ
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 the Multi-beam Door Sensor feature that detects passengers boarding or exiting.	◎	◎	◎
Extended Door-open Button	DKO-TB	When the button inside a car is pressed, the doors will remain open longer to allow loading and unloading of baggage, a stretcher, etc.	◎	◎	—
Hall Motion Sensor	HMS	Infrared-light is used to scan a 3D area near the open doors to detect passengers or objects.	◎	◎	◎
Multi-beam Door Sensor	—	Multiple infrared-light beams cover some height of the doors to detect passengers or objects as the doors close.	Ⓢ	Ⓢ	Ⓢ
Reopen with Hall Button	ROHB	Closing doors can be reopened 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 cleared from the doorway.	Ⓢ	Ⓢ	Ⓢ
Safety Door Edge	SDE	The sensitive door edge detects passengers or objects during door closing.	◎[#1]	◎[#1]	◎[#1]
■ OPERATIONAL AND SERVICE FEATURES					
Attendant Service	AS	Exclusive operation where an elevator can be operated using the buttons and switches located in the car operating panel, allowing smooth boarding of passengers or loading of baggage.	◎	◎	◎
Automatic Bypass	ABP	A fully-loaded car bypasses hall calls in order to maintain maximum operational efficiency.	Ⓢ[#2]	Ⓢ	Ⓢ
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 maintains 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 mistakes 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 turn off to conserve energy.	Ⓢ	Ⓢ	Ⓢ

Feature	Abbreviation	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ OPERATIONAL AND SERVICE FEATURES (Continued from the previous page.)					
Continuity of Service	COS	A car which is experiencing trouble is automatically withdrawn from group control operation to maintain overall group performance.	Ⓢ[†]	Ⓢ	Ⓢ
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.	◎[#3]	◎	◎
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.	◎	◎	Ⓢ
False Call Canceling — Car Button Type	FCC-P	If a wrong car button is pressed, it can be canceled by quickly pressing the same button again twice.	◎	◎	◎
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 open.	Ⓢ	Ⓢ	Ⓢ
Non-service to Specific Floors — Car Button Type	NS-CB	To enhance security, service to specific floors can be disabled using the car operating panel. This function is automatically deactivated during emergency operation.	◎	◎	◎
Non-service to Specific Floors — Switch/Timer Type	NS NS-T	To enhance security, service to specific floors can be disabled using a manual or timer switch. This function is automatically deactivated during emergency operation.	◎[#3]	◎	◎
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 operation.	◎[#4]	◎[#4]	◎[#4]
Out-of-service by Hall Key Switch	HOS HOS-T	For maintenance or energy-saving measures, a car can be taken out of service temporarily with a key switch (with or without a timer) mounted in a specified hall.	◎	◎	◎
Out-of-service-remote	RCS	With a key switch on the MelEye, etc., a car can be called to a specified floor after responding to all car calls, and then automatically be taken out of service.	◎	◎	◎
Overload Holding Stop	OLH	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.	Ⓢ	Ⓢ	Ⓢ
Regenerative Converter	PCNV	For energy conservation, power regenerated by a traction machine can be used by other electrical systems in the building.	Ⓢ[#5]	Ⓢ[#5]	Ⓢ[#5]
Return Operation	RET	Using a key switch, 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.	◎	◎	◎
Safe Landing	SFL	If a car has stopped between floors due to some 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.	Ⓢ	Ⓢ	Ⓢ
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 operation.	◎	◎	◎
Variable Traveling Speed Elevator System	VSE	According to the number of passengers in the car, the car travels faster than the rated speed.	◎	◎	◎
■ 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.	◎[†,#4]	◎	◎
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.)	—	◎[#4]	◎
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.	—	—	◎[#6]
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.	—	◎	◎
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 that it adversely affects passenger waiting time.	—	◎	Ⓢ
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.)	—	◎[#4]	◎

Features (2/2)

Feature	Abbreviation	Description	1C to 2C 2BC	3C to 4C ΣAI-22	3C to 8C ΣAI-2200C
■ GROUP CONTROL FEATURES (Continued from the previous page.)					
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 (lobby) 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 (lobby) floor with the doors open.	Ⓞ	Ⓞ	Ⓞ
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.)	—	Ⓞ#4	Ⓞ
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.)	—	Ⓞ#4	Ⓞ
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.	—	Ⓞ	Ⓞ
VIP Operation	VIP-S	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.	Ⓞ†, #4	Ⓞ	Ⓞ
■ SIGNAL AND DISPLAY FEATURES					
Auxiliary Car Operating Panel	ACS	An additional car control panel which can be installed for large-capacity elevators, heavy-traffic elevators, etc.	Ⓞ	Ⓞ	Ⓞ
Basic Announcement	AAN-B	A synthetic voice (and/or buzzer) alerts passengers inside a car that elevator operation has been temporarily interrupted by overloading or a similar cause. (Available in limited languages.)	Ⓞ#1	Ⓞ#1	Ⓢ
Car Arrival Chime	AECC (car)	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.)	Ⓞ	Ⓞ	—
	AECH (hall)		Ⓞ	Ⓞ	Ⓢ
Car Information Display	CID	This 10.4- or 15-inch LCD for car front return panels shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.	Ⓞ	Ⓞ	Ⓞ
Car LCD Position Indicator	CID-S	This 5.7-inch LCD for car operating panels shows the date and time, car position, travel direction and elevator status messages.	Ⓞ	Ⓞ	Ⓞ
Flashing Hall Lantern	FHL	A hall lantern, which corresponds to a car's service direction, flashes to indicate that the car will soon arrive.	Ⓞ	Ⓞ	Ⓢ
Hall Information Display	HID	This 10.4- or 15-inch LCD for elevator halls shows the date and time, car position, travel direction and elevator status messages. In addition, customized video images can be displayed in full-screen or partial-screen formats.	Ⓞ	Ⓞ	—
Hall LCD Position Indicator	HID-S	This 5.7-inch LCD for elevator halls shows the date and time, car position, travel direction and elevator status messages.	Ⓞ	Ⓞ	—
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 lights up and a chime sounds once to indicate which doors will open.	—	Ⓞ	Ⓞ
Intercommunication System	ITP	A system which allows communication between passengers inside a car and the building personnel.	Ⓢ	Ⓢ	Ⓢ
Second Car Prediction	TCP	When a hall is crowded 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.	—	—	Ⓞ
Sonic Car Button — Click Type	ACB	A click-type car button which emits electronic beep sounds when pressed to indicate that the call has been registered.	Ⓢ	Ⓢ	Ⓢ
Voice Guidance System	AAN-G	Information on elevator service such as the current floor or service direction is given to the passengers inside a car.	Ⓞ	Ⓞ	Ⓞ

Notes: 1C-2BC (1-car selective collective) - Standard, 2C-2BC (2-car group control system) - Optional,
ΣAI-22 (3- to 4-car group control system) - Optional, ΣAI-2200C (3- to 8-car group control system) - Optional
Ⓢ = Standard Ⓞ = Optional † = Not applicable to 1C-2BC — = Not applicable
#1: Standard feature when the rated capacity is from 1600kg to 2500kg.
#2: Optional when the operation system is 1C-2BC.
#3: When 2C-2BC, please consult our local agents.
#4: Please consult our local agents for the production terms, etc.
#5: The conventional system is available instead of regenerative converter. Please consult our local agents for application.
#6: • When the DOAS is applied, AECC is Ⓢ.
• The DOAS cannot be combined with some features. Please refer to the ΣAI-2200C brochure for those features.

Important Information on Elevator Planning

Work Not Included in Elevator Contract

The following items are excluded from Mitsubishi Electric's elevator installation work. Their details or conditions are to be conformed to the statement of EN81-20/50: 2014, local laws or Mitsubishi Electric elevator's requirements, are therefore the responsibility of the building owner or general contractor.

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

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

Elevator Site Requirements

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

Ordering Information

Please include the following information when ordering or requesting estimates:

- The desired number of units, speed and loading capacity.
- The number of stops or number of floors to be served.
- The total elevator travel and each floor-to-floor height.
- Operation system.
- Selected design and size of car.
- Entrance design.
- Signal equipment.
- A sketch of the part of the building where the elevators are to be installed.
- The voltage, number of phases, and frequency of the power source for the motor and lighting.

State-of-the-Art Factories…
For the Environment. For Product Quality.

Mitsubishi Electric elevators and escalators are currently operating in approximately 90 countries around the globe. Built placing priority on safety, 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 Elevator Asia Co., Ltd. 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 for a greener tomorrow

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.

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

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

EN

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Specifications are subject to change without notice.

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