

A wide range of Comfort and Convenience Features

Feature	Description	2BC	Σ AI-22	Σ AI-2200
■ OPERATIONAL AND SERVICE FEATURES				
High accuracy landing feature (HARL)	Car landing level is precisely adjusted according to various conditions. The result is maximum ±5mm landing accuracy under any condition.	Ⓢ	Ⓢ	Ⓢ
Motor drive mix (MDX)	Car acceleration is increased according to car load during peak times to reduce passenger waiting and travel time.	—	Ⓞ	Ⓞ
Power-on releveling (PORL)	If a car stops at a door zone due to normal power failure, the car will relevel to secure the floor level, with the doors open, after normal power recovery.	Ⓢ	Ⓢ	Ⓢ
Safe landing (SFL)	If there is a malfunction and the elevator stops between floors, the controller performs a diagnostic check before moving the elevator to the nearest floor.	Ⓢ	Ⓢ	Ⓢ
Next landing (NXL)	If the elevator doors cannot open fully at the destination floor for any reason, the doors will close and the elevator proceed to the next floor.	Ⓢ	Ⓢ	Ⓢ
Continuity of service (COS)	A car experiencing trouble is automatically withdrawn from group operation to maintain overall group performance.	Ⓢ†	Ⓢ	Ⓢ
Automatic bypass (ABP)	A full-loaded car will bypass hall calls in order to assure optimum operating efficiency. (Optional in case of 1-car 2BC system)	Ⓢ	Ⓢ	Ⓢ
Overload holding stop (OLH)	The elevator buzzer rings to indicate the car is overloaded.	Ⓢ	Ⓢ	Ⓢ
Automatic hall call registration (FSAT)	If one car cannot carry all waiting passengers because it is full, another car is automatically assigned for the remaining passengers.	Ⓢ	Ⓢ	Ⓢ
Car call canceling (CCC)	When a car responds to the final car call in one direction, the system automatically checks and clears the remaining calls from memory in the other direction.	Ⓢ	Ⓢ	Ⓢ
False call canceling — Automatic (FCC-A)	If the number of car calls registered does not correspond to the car load, all calls are canceled to avoid unnecessary stops.	Ⓢ	Ⓢ	Ⓢ
Car light/fan shut off — Automatic (CLO-A/CFO-A)	If there is no call within a preset time period, the car light/fan is automatically shut off to conserve energy.	Ⓢ	Ⓢ	Ⓢ
Backup operation for group control microprocessor (GCBK)	The backup function minimizes the loss of group control due to failure of a microprocessor or transmission line.	Ⓢ†	Ⓢ	Ⓢ
Car call erase (FCC-P)	If the wrong floor button is pressed, it can be canceled by rapidly pressing the same button twice.	Ⓢ	Ⓢ	Ⓢ
Remote-control car stop (RCS)	With a key switch, a car can be called to a specified floor (on completion of service) and automatically withdrawn from service.	Ⓞ	Ⓞ	Ⓞ
Secret call service (SCS-B)	Car buttons can be locked and accessed only by entering a secret code on the car operating panel. (During an emergency, service floor selection is halted.)	Ⓞ	Ⓞ	Ⓞ
Non-service to specific floor — Car button type (NS-CB)	Service to specific floors can be suspended by locking floor buttons on the car operating panel. (During an emergency, service floor selection is halted.)	Ⓞ	Ⓞ	Ⓞ
Non-service to specific floor — Switch/timer type (NSNS-T)	Service to specific floors can be suspended by a manual or time-clock operated switch. (During an emergency, service floor selection is halted.)	Ⓞ	Ⓞ	Ⓞ
Hall out-of-service operation (HOS/HOS-T)	Using a key switch (installed at a specified floor) or time-clock, a car can be taken out of service for maintenance or energy-saving.	Ⓞ	Ⓞ	Ⓞ
Return operation (RET)	A car can be called to a specified floor for independent use using a key switch installed on the supervisory panel.	Ⓞ	Ⓞ	Ⓞ
Attendant service (AS)	Operation mode is switchable between fully automatic and attendant service using an override switch in the car operating panel.	Ⓞ	Ⓞ	Ⓞ
Independent service (IND)	A car can be isolated from group service and used without interruption using the override switch in the car operating panel.	Ⓢ	Ⓢ	Ⓢ

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■ GROUP CONTROL FEATURES				
Expert system and fuzzy logic	The system performs group control using expert knowledge, programmed by applying the expert system and fuzzy logic, to maximize the effectiveness of each elevator operation.	—	Ⓢ	Ⓢ
Psychological waiting time evaluation	This system predicts the psychological waiting time of passengers for each hall call and allocates cars to minimize it. Moreover, psychological waiting time evaluation rules are changed automatically according to actual service conditions.	—	Ⓢ	Ⓢ
Strategic overall assignment	The system predicts near-future car positions and hall calls. Car assignments consider current and predicted data.	—	Ⓢ	Ⓢ
Car travel time evaluation	To reduce car travel time, each car is allocated to hall calls with consideration to the number of car calls.	—	Ⓢ	Ⓢ
Distinction of traffic flow with neural networks (NN)	The system uses neural networks to recognize precise distinctive patterns of traffic flow in real time. This results in optimizing the selection and cancellation of operation patterns.	—	—	Ⓢ
Car allocation tuning (CAT)	The system controls the number of cars allocated to or parked on the crowded floors according to traffic conditions on each floor and car status.	—	—	Ⓢ
Dynamic rule-set optimizer (DRG)	Using neural network technology, the system predicts traffic flow in the building. The optimal rule-set for group control is selected through real-time simulations according to the predicted traffic.	—	—	Ⓢ
Destination oriented prediction system (DOAS-S)	When a passenger presses a destination floor button on the hall operating panel, the service car is immediately indicated next to the destination floor button. The system dispatches the cars according to destination floors to improve traffic efficiency and minimize congestion. (Cannot be combined with IUP feature.)	—	—	Ⓞ
Peak traffic control (PTC)	To alleviate temporary traffic congestion, cars are automatically assigned (in preferential order) to floors with the heaviest traffic.	—	Ⓢ	Ⓢ
Strategic overall spotting (SOHS)	Cars that have finished service are assigned to deploy so that the waiting time for future passengers is reduced.	Ⓢ†	Ⓢ	Ⓢ
Intense up peak (IUP)	To improve traffic efficiency, the elevator bank is divided into two groups of cars during peak periods to serve upper and lower floors respectively. (Cannot be combined with DOAS-S feature.)	—	—	Ⓞ
Up peak service (UPS)	Controls timing and distribution of cars assigned to meet traffic demand during increased upward service.	—	Ⓞ	Ⓞ
Down peak service (DPS)	Controls timing and distribution of cars assigned to meet traffic demand during increased downward service.	—	Ⓞ	Ⓞ
Forced floor stop (FFS)	Each car in the elevator bank will stop at a specified floor on every trip—without being called.	Ⓞ	Ⓞ	Ⓞ
Main floor parking (MFP)	An available car will park at the main floor with the doors open.	Ⓞ	Ⓞ	Ⓞ
Energy-saving operation — Reduction under off-peak (ESO-A)	Car controller reduces power consumption for inverter when the elevators are in standby mode. In addition, during off-peak periods, some car goes into "sleep mode", monitoring elevator calls to further reduce energy requirements.	—	Ⓞ#	Ⓢ#
Energy-saving operation — Speed control (ESO-V)	When traffic conditions reach low enough levels that service will not be adversely affected, the system reduces elevator speed to conserve energy.	—	Ⓞ	Ⓞ
Special floor priority service (SFPS)	Provides priority car service to a specified floor (e.g. VIP rooms) when a hall call is made at that floor. (Cannot be combined with hall indicator.)	—	Ⓞ#	Ⓞ
Closest-car priority service (CNPS)	Assigns cars with priority given to the car closest to the hall call button pressed. (Cannot be combined with hall indicator.)	—	Ⓞ#	Ⓞ
Light-load car priority service (UCPS)	Assigns cars with priority given to empty or light-load cars in the group control system during light traffic. (Cannot be combined with hall indicator.)	—	Ⓞ#	Ⓞ
Special car priority service (SCPS)	Assigns cars with priority given to special cars (e.g. observation elevator or elevator with basement service) in the group control system. (Cannot be combined with hall indicator.)	—	Ⓞ#	Ⓞ
Congested-floor service (CFS)	The system monitors the degree of traffic density or flow in the building and automatically assigns cars to the most crowded floors to alleviate traffic congestion quickly.	—	Ⓞ	Ⓞ

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Bank-separation operation (BSO)	The hall buttons can be divided into groups for independent group control to serve special needs or different floors.	—	⊙	⊙
VIP operation (VIP-S)	A specified car can be withdrawn from group service for special or VIP service.	—	⊙	⊙
Lunchtime service (LTS)	Car assignment can be adjusted to give priority to canteen or restaurant floors to accommodate high demand during lunchtime.	—	⊙	⊙
Main floor changeover operation (TFS)	The designated main floor can be changed by manual switch or time-clock operation to suit buildings with alternating main floors.	⊙	⊙	⊙

■ DOOR OPERATION FEATURES

Door sensor self-diagnosis (DODA)	If a non-contact door sensor fails, the system will automatically determine the timing of door closing to maintain the elevator service.	⊙	⊙	⊙
Automatic door speed control (DSAC)	The system monitors the actual door load conditions at each floor and automatically adjusts the door speed and torque accordingly.	⊙	⊙	⊙
Automatic door-open time adjustment (DOT)	Door opening times are automatically adjusted to whether the stop was called from the floor or the car.	⊙	⊙	⊙
Reopen with hall button (ROHB)	While the doors are closing, they can be reopened by pressing the hall button.	⊙	⊙	⊙
Repeated door-close (RDC)	Should an obstacle prevent the doors from closing, the doors will repeatedly open and close until the obstacle is removed.	⊙	⊙	⊙
Extended door-open button (DKO-TB)	This button in the car keeps the doors open for an extended period to allow loading of materials, luggage, etc.	⊙	⊙	—
Door nudging feature (NDG)	If the doors remain open longer than the preset period, voice guidance alerts passengers that the doors will close.	⊙	⊙	⊙
Door load detector (DLD)	If the doors cannot open or close properly, the door direction is reversed.	⊙	⊙	⊙
Safety door edge (SDE) on both sides	Sensitive door edges detect passengers or objects during door closing. (CO & 2CO doors only.)	⊙	⊙	⊙
Safety ray (SR)	One or two infrared-light beams cover the full width of the door as it opens or closes to detect passengers or objects. (Cannot be combined with multi-beam door sensor.)	⊙	⊙	⊙
Ultrasonic door sensor (USDS)	Sound waves are used to scan a 3D area near the open doors to detect passengers or objects.	⊙	⊙	⊙
Electronic doorman (EDM)	By using safety ray or multi-beam door sensor to monitor passengers boarding and exiting, the door-open time can be minimized.	⊙	⊙	⊙
Multi-beam door sensor	Multiple infrared-light beams cover the full height of the doors as they close to detect passengers or objects. (Cannot be combined with SR feature.)	⊙	⊙	⊙
3D multi-beam door sensor	Multiple infrared-light beams cover the full height of the doors as they close to detect passengers or objects. The 3D sensor can also monitor the hall by expanding multiple infrared-light beams. (Cannot be combined with SR feature.)	⊙	⊙	⊙

■ SIGNAL AND DISPLAY FEATURES

Sonic car button — Click type (ACB)	An electronic beep sounds for the passenger's convenience when a click-type car button is pressed.	⊙	⊙	⊙
Car arrival chime (AECG/AECH)	Electronic chime sounds to indicate the car's arrival. (The chime is mounted on the top and bottom of the car, or on each floor if desired.)	⊙	⊙	⊙ (each floor)
Flashing hall lantern (FHL)	Hall lantern flashes to indicate the car's arrival and its service direction.	⊙	⊙	⊙
Car graphic panel (CGP)	Car graphic panel comprises LCD display and touch panel. The display shows car position, direction, time, messages, and other information. The touch panel shows destination buttons and information in graphics and registers calls with a light touch.	⊙#	⊙#	⊙#
Car information display (CID)	An integrated display to indicate preset messages and time, as well as car position/direction, can be installed on the car operating panel.	⊙#	⊙#	⊙#
Hall information display (HID)	An integrated display to indicate preset messages and time, as well as car arrival with direction or destination floors if using the IUP feature, can be installed at an elevator entrance. (Details depend on basic system, specifications, space, etc.)	⊙#	⊙#	⊙#

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Immediate prediction indication (AIL)	Once a passenger has registered a hall call, the ideal car to respond is selected, the hall lantern lights and a chime sounds once to indicate which door will open.	—	—	⊙
Second car prediction (TCP)	During peak hours when the lobby is crowded, while the first car is loading, the next car to serve that floor will be indicated by illuminated hall lantern.	—	—	⊙
Attentive announcement (AAN-B)	A synthesized voice instructs passengers in case normal operation is suspended (English only)	⊙	⊙	⊙
Voice guidance system (AAN-G)	A synthesized voice instructs passengers on the current status, floor number, etc. (English only)	⊙	⊙	⊙
Auxiliary car operating panel (ACS)	This panel is for large-capacity elevators and heavy-traffic elevators which need extra controls within the car.	⊙	⊙	⊙
Interphone (ITP)	Intercom allows passengers to contact building personnel.	⊙	⊙	⊙

■ EMERGENCY OPERATIONS AND FEATURES

Mitsubishi emergency landing device (MELD)	In a power failure, the elevator's own rechargeable battery power moves the car to the nearest floor. (Applicable when the distance between floors is less than 10m.)	⊙	⊙	⊙
Operation by emergency power source — Automatic/Manual (OEPS)	In a power failure, preset cars are automatically called to a specified floor in sequence using the building's emergency power source. Once all cars have arrived at the floor, the designated elevators can operate normally.	⊙	⊙	⊙
Fire emergency return (FER)	On activation of a key switch on the supervisory panel or the building's fire sensors, all calls are canceled and all cars will immediately return to a specified rescue floor and park there with doors open.	⊙	⊙	⊙
Fireman's emergency operation (FE)	During a fire, when the fireman's switch is activated, all calls are canceled and the designated car returns immediately to a specified floor. To facilitate rescue, the car responds only to car calls.	⊙	⊙	⊙
Earthquake emergency return (EER-P/EER-S)	On activation of the seismic sensors, all cars will stop promptly at the next floor and park there with the doors open.	⊙	⊙	⊙
Supervisory panel (WP)	This panel monitors elevator operations and controls emergency operations from the building's control room, etc. Position indicators and direction lights are also available.	⊙	⊙	⊙
Mitsubishi elevator monitoring and control system (MELMOS-II)	This system uses a personal computer to monitor the elevator operations and conditions, and to provide operation commands if necessary.	⊙	⊙	⊙
Emergency car lighting (ECL)	Turns on immediately when power fails, and provides a minimum level of illumination within the car.	⊙	⊙	⊙

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Quality
in Motion

Number One for Quality

- Saving energy and space
- High-efficiency transport mechanism
- Environment-conscious industrial waste treatment

EFFICIENCY

COMFORT

- Comfortable, quiet ride
- Smooth door operation
- Welfare-conscious / Universal design

SAFETY

- Riding and boarding safety
- Safety in emergencies
- High reliability
- Safe service spots



Mitsubishi Electric Inazawa Works has acquired ISO 9001 certification by the International Standards Organization (ISO) based on a review of quality management for the System. The plant has also acquired the environmental management system standard ISO 14001 certification.