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Quality as firm as rock and intelligent
manufacturing with craftsmanship

LEHY-G
LEHY Series Cargo Elevator

LEHY-G

Quality as firm as rock and intelligent manufacturing with craftsmanship

High Quality

More Intimate

Higher Speed
the maximum speed is 1m/s, 2000kg-5000kg

More Flexibility
lower civil requirements

More Durable
component configuration with higher quality,
more durable service life

Brand-new Control System
adopting international high-end brand components, equivalent to passenger elevators

Brand-new features
full area without stopping, cargo elevator collision avoidance

Brand-new Interface
upgraded AGV car, intelligent linkage



High Quality

Strong Coping Capability

Lower Civil Requirements

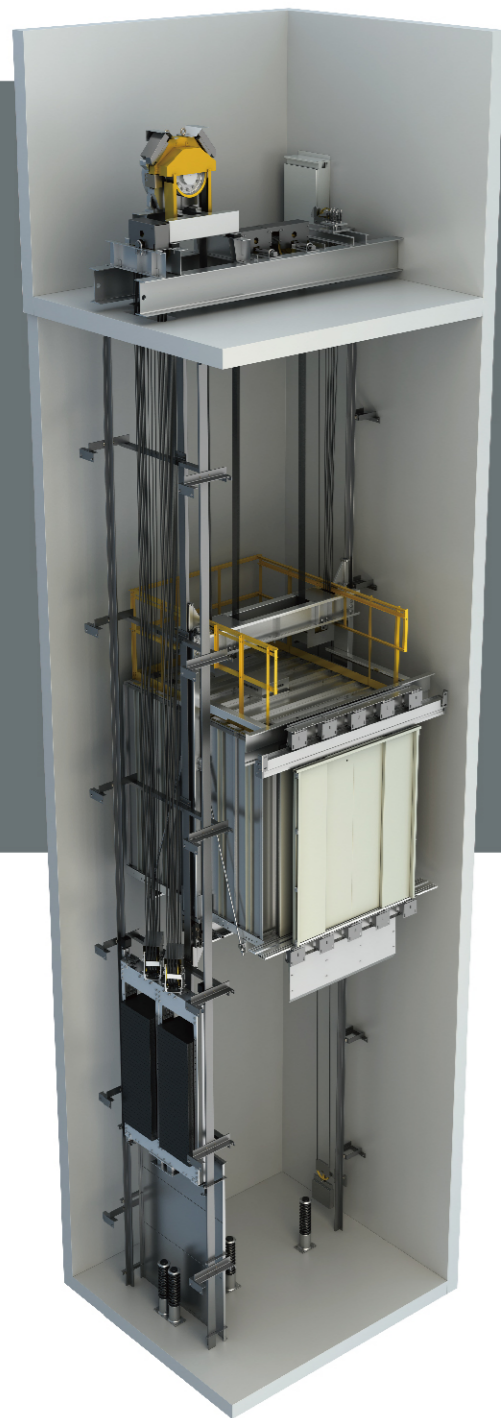
The size of the machine room is smaller

Wider Specification Coverage

The maximum speed can reach 1m/s (2000kg-5000kg)

Adapt to More Scenes

Can meet the requirements for transporting forklifts and car elevators



Application Scenario	 Trolley	 Electric pallet forklift
	 Manual forklift	 Counterweight forklift
Product Type	Cargo elevator (standard)	Cargo elevator (forklift)
Rated Capacity (kg)	2000 3000	3000 5000
Rated Speed (m/s)	0.5 1	0.5 1
Max. Travel Rise (m)	60	60
Single max. Allowable Mass (kg)* 1	0.6 × Rated Capacity	1.0 × Rated Capacity

*1: The single max. allowable mass refers to the total load weight entering the car at a single time (including loading/unloading equipment, goods and personnel)
*2: If the customer's application scenario is beyond the stated scope, please consult Shanghai Mitsubishi Elevator Co., Ltd.

The LEHY-G series adopts PM traction machine, thin control panel and compact layout, which minimizes the area of the machine room, greatly reduces the design difficulty and construction cost of the building, improves the utilization rate of the building, and reduces the impact of the machine room on the appearance of the building.

High Quality Components

Permanent Magnet Synchronous Traction Machine with High Performance

SMEC high-quality traction machine is adopted, and motor technologies such as segmented punching and riveting integrated core and automatic centralized winding are comprehensively applied, so that the output of traction machine is more energy-saving, quieter and more stable.

Thin Control Panel

The newly designed control panel uses high-performance chips such as 32-bit CPU, 32-bit high-speed digital signal processor (DSC) and large-scale field programmable gate array (FPGA) to realize a monolithic, modular and thin control panel. With internationally advanced SMT (surface mounting) technology, the elevator control and motor drive are truly digitized, the control performance of the system is further improved, and the reliability and anti-interference capability are enhanced.

Reliable Configuration

Long Life of Components

Unit: ten thousand times

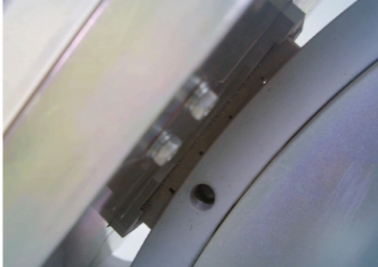
Item	SMEC indicator	Industry average *
Design action life of brake	1500	About 700
Car door system test	1350	About 500
Design action life of button	500	About 300

$$\frac{15 \text{ million times}}{365 \text{ days} \times 2000 \text{ times/day}} = 20 \text{ years}$$


*: Data sourced from industry investigation

Traction machine brake test
15 million times

► The brake of traction machine is similar to the braking system of automobile



Car door opening and closing test
15 million times



Car door system test
13.5 million times



Test of hatch door lock device
3 million times



Safety Light Curtain

- High-quality light curtain can help greatly reduce accidents
- IP65 protection grade: normal operation can be guaranteed under worse working conditions
- Light curtain beams ≥174: dense light curtain beams can judge the condition of the door zone more accurately

Linear Weighing Device

The car capacity can be measured more accurately, and the car can be started and stopped more comfortably and smoothly.

Higher Component Strength

For wheel train components such as top sheave, CWT sheave and machine room suspension sheave, cast iron sheaves are provided as standard.

Spring Buffer

Equipped with spring buffer, which has a long service life.

Metal Structure

The main structure of the car door machine is metal parts, which are durable and reliable.

Energy-saving Device

The car ceiling adopts LED lighting. Optional intelligent power supply technology can automatically turn off the car lighting and fans when the elevator is standby.

More Intimate

Anti-collision Function



Hatch Door Anti-collision Function

It is a standard function for forklift elevators, and can effectively reduce the occurrence of door collision when the forklift enters the car; It is an optional function for standard elevators.

Car Door Anti-collision Function (optional)

Effectively reduce the occurrence of door collision when the forklift reverses out of the car.

Voice Call (optional)

For elevators with only 2 floors, car calls will be automatically registered; for elevators with multiple floors, if the car voice registration is selected, the attendant doesn't need to get off the car for operation.

Audible and Visual Prompt Function for Closing (optional)

In the process of 3s before the elevator door closes until it closes in place, the light will flash and the buzzer will beep to avoid the door collision.

Reinforced Iron Sill (optional)

It is provided as standard for forklift elevators to improve the service life of the sill.

Wide-angle Lens (optional)

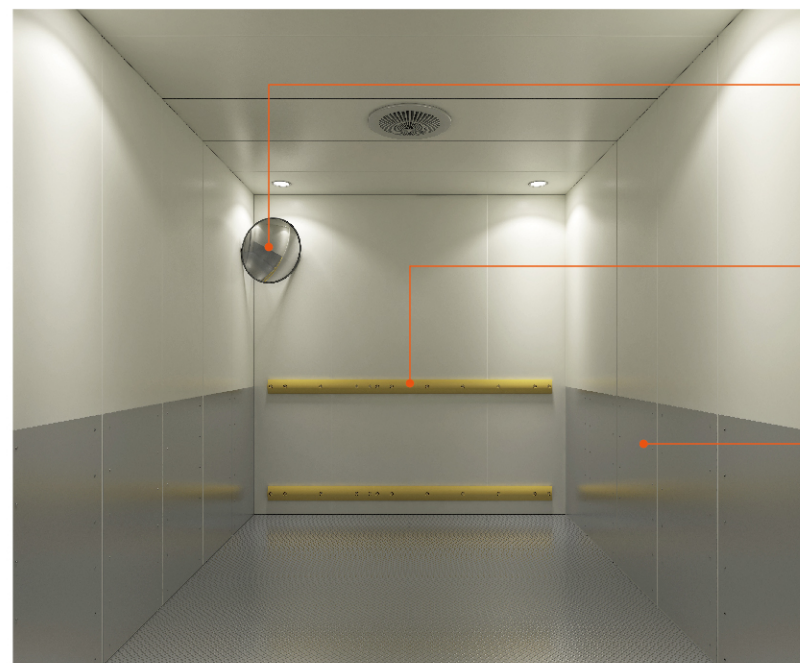
It is convenient for forklift drivers to observe the distance between the goods and the front car wall and prevent them from hitting the front car wall.

Front Anti-collision Device (optional)

Buffer PVC anti-collision strips can be selected, and bolt connection is convenient to replace. Stainless steel guards can be selected.

Side Anti-collision Device (optional)

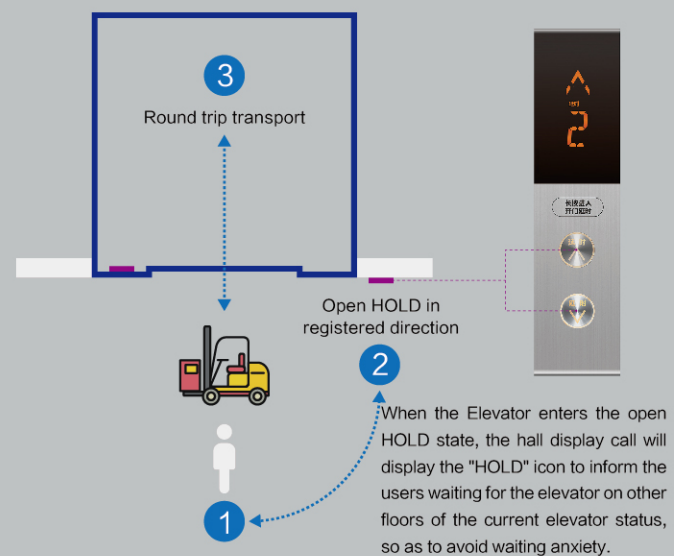
Stainless steel guards can be selected to solve the problem that the side wall is easy to be scratched, and they do not occupy the space in the car. The riveting connection of the guards facilitate replacement. When the width of the front wall is $\geq 50\text{mm}$, the side wall can be equipped with anti-collision strips (the same as the front wall).



Hall Door Open HOLD

Hall HOLD button/hall HOLD Status Display

Hall door open HOLD function can be selected; it is integrated in the hall call. When the call direction button is displayed at the registered hall, press it for more than 2s to enter the "open HOLD" mode, that is, when the elevator arrives at the stop to respond to the hall call, the door will keep open for 1 minute as standard.



Realize through the smart elevator APP

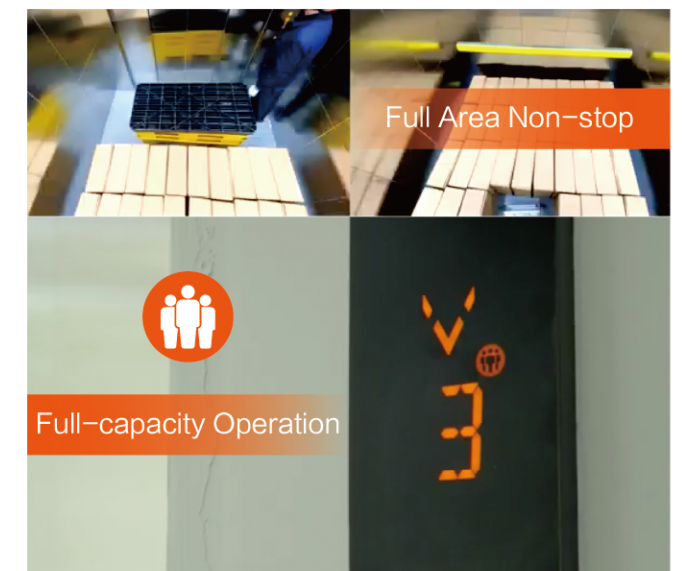
Relying on the EleCare APP for smart elevators, managers are allowed to adjust the open HOLD time of elevator door according to actual needs. The standard time is 1 minute, and the maximum time can be set to 60 minutes to meet the different scene needs of customers.



Intelligent AGV Trolley Linkage

The AGV trolley communication protocol is fully optimized to provide more intelligent, more efficient and more stable AGV trolley linkage function, guide the AGV smart trolleys to take the elevator up and down automatically, improve transportation efficiency and personnel safety, and meet the needs of cross-floor cargo handling and intelligent factories.

Note: SMEC only provides AGV interface, and AGV trolley is provided by the third party.



Full Area Non-stop (optional)

When it is detected that the car area is occupied beyond the preset threshold, it only responds to the car call and does not respond to the hall call; at the same time, the icon of full-capacity operation is displayed on the hall call.

Decoration Configuration

Car Decoration

- Car Wall: hairline finished stainless steel / coated steel plate
- Car Door: hairline finished stainless steel / coated steel plate
- Upper Plate of Entrance: hairline finished stainless steel / coated steel plate
- Entrance Column: hairline finished stainless steel
- Car Operation Panel: ZCBA12-CD11
- Car Floor: patterned steel plate / patterned stainless steel
- Car Sill: standard iron sill and reinforced iron sill
- Anti-collision Strip: PVC/wood, recommended for the front
- Guard: hairline finished stainless steel, recommended for the side



ZCBA12-CD11



Hairline finished stainless steel car wall



Coated steel plate car wall (color code: Y033)

Ceiling



ZCL-SN08S

Material: hairline finished stainless steel
Lighting: LED down light direct lighting



ZCL-SN08

Material: coated steel plate (color code: ZY015)
Lighting: LED down light direct lighting

Hall Design



Door Jamb Model: E-102
Hall Display Call: ZPIA12-GD10/ ZPIA32-GD10
Hatch Door: hairline finished stainless steel / coated steel plate
Door Jamb: hairline finished stainless steel / coated steel plate



ZPIA32-GD10

Button A32 is configured only when the hall door open HOLD function (HDE) is configured

Classic Projects



Zhuhai Hengqin International Finance Center (IFC)



Shanghai Baosteel Group



Shanghai Museum



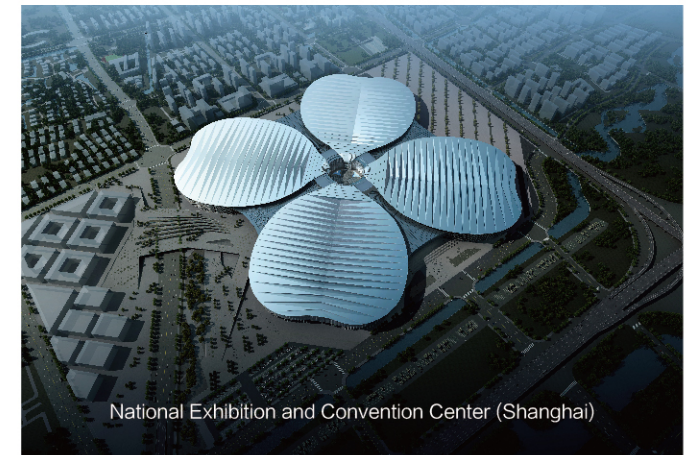
Chengdu Shufeng



Everdisplay Optronics (Shanghai) Co., Ltd. (EDO)



National Ocean Museum



National Exhibition and Convention Center (Shanghai)



Cainiao Post



JD.COM Warehouse



Hubei Provincial Museum

Features

Control and Security Features

●:Standard, ○:Optional

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Automatic Landing with Rheostatic Leveling	When the car parks at a station, if the vertical difference between the upper plane of the car sill and that of the landing door sill exceeds predetermined value, the elevator will level automatically.	ARL	●	●	●
Anti-stall Timer	When the traction rope slips or motor stall reaches predetermined time, the elevator will stop.	AST	●	●	●
Brake Redundancy Protection	When a group of brakes fails, the remaining brakes still can realize effective braking of the elevator.	BTUP	●	●	●
Electrical Safe Loop Protection	Prevent the elevator from operating once the electrical safety devices connected together in series act.	ESC	●	●	●
Inspection Operation	Inspection operation mode for maintenance staff.	INSP	●	●	●
Load Weighing Start	The elevator adjusts startup torque according to the car load so as to allow smooth start.	LWS	●	●	●
Over-current Protection	Stop elevator when the current through the rectifier or inverter is detected too high.	OCP	●	●	●
Over-speed Protection	Stop elevator when the running speed is detected over allowable value.	OSP	●	●	●
Over-voltage Protection	Stop elevator when the voltage across the rectifier or inverter is detected too high.	OVP	●	●	●
Power Failure Protection	Stop elevator when open-phase, undervoltage or other faults of power occurs.	PPF	●	●	●
Reversal protection	Stop elevator when it is detected running in reversed direction.	RSP	●	●	●
Selector Correcting	The elevator corrects the selector during operation.	SC	●	●	●
Safe Landing	If a car has stopped between floors for some reason, the controller checks the cause, and if it is considered safe to move the car, the car will move to the nearest floor and doors will open.	SFL	●	●	●
Stop Open	The car doors open automatically after the car stops at a floor.	SO	●	●	●
Inverter High-temperature Detect	Stop elevator when inverter high-temperature is detected.	THMF	●	●	●
Terminal Forced Decelerate	If the car runs to the terminal but the speed has not been reduced to specified value, the system will force it to decelerate and thus enable it to level normally.	TSD	●	●	●
Unintended Car Movement Protection	Elevator safety component to stop unintended car movement away from the landing with the landing door not in the locked position and the car door not in the closed position, as a result of any single failure of the lift machine or drive control system.	UCMP	●	●	●
Under speed Protection	Stop elevator when the running speed is detected under allowable value.	USP	●	●	●

Operational and Service Features

●:Standard, ○:Optional, —:Not applicable

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Automatic Bypass	When the car load exceeds 80% (adjustable) rated capacity, the elevator does not response hall calls from other floors along its travel.	ABP	●	●	●
Attendant Service	Normal operation of the elevator is conducted by an attendant	AS	○	○	○
Bypass	Bypass all hall calls when the attendant serves and activates the 'Bypass' button.	BP *1	○	○	○
Car Computer Back Up Operation	When an abnormality occurs on the car computer, the car stops at nearest floor and the elevator cannot restart.	CCBK	●	●	●
Car Call Cancelling	In automatic operation, when a car has responded to the final car call or landing call in one direction, the system automatically checks and clears remaining car calls from the memory.	CCC	●	●	●
Car Fan Shut Off - Automatic	If there are no calls for a specified period, the car ventilation fan will automatically be turned off to conserve energy.	CFO-A	○	○	○
Car Fan Shut Off - Manual (button type)	The car ventilation fan is turned off by combination buttons on the operation panel.	CFO-B	●	●	●
Car Light Shut Off - Automatic	If there are no calls for a specified period, the car light will automatically be turned off to conserve energy.	CLO-A	○	○	○
Car Light Shut Off - Manual (button type)	The car light is turned off by combination buttons on the operation panel.	CLO-B	●	●	●
Continuity of Service	To ensure normal operation of elevators in a whole group, when a certain elevator cannot respond registered landing calls, it will be excluded from landing call service, and service is provided by other elevators.	COS	—	●	●
Self-diagnosis	Diagnose abnormalities and faults occurred during elevator operation.	EFD	●	●	●
Exit Switch	Switch for detecting state of exit	EXIT SW	○	○	○
False Call Cancelling - Automatic	If the number of registered calls is not agree with the number of passengers, it will cancel all calls to avoid unnecessary stops.	FCC-A*2	○	○	○
False Call Cancelling - Manual (car button type)	If the wrong car button is pressed, it can be canceled by quickly pressing the same button again twice.	FCC-P	○	○	○
Floor Height Auto-Measurement	Automatically measure and save the landing height.	FMR	●	●	●
Hall Computer Back UP Operation	When an abnormality occurs on the hall computer, the car stops at nearest floor and the elevator cannot restart.	HCBK	●	●	●
Hall DKO Time	DKO function is integrated in the hall call. When the hall button is long pressed, the hall DKO function is triggered. When the elevator arrives at the stop and responds to the hall call, the door is kept open, and the standard time is 1 minute.	HDE	○	○	○
Hall Out-of-service Operation	Turn on or shut off the elevator by operating the "RUN/STOP" switch installed on specified floor.	HOS	●	●	●
Independent Service	Using the Independent switch in the operation panel, the car can respond only to car calls without interrupting service.	IND	●	●	●
Not Start Operation	When landing call or car call is registered but the car cannot start within predetermined time, it will clear the assigned landing call, reserve the car call, light up the Abnormal lamp, and sound the Abnormal bell.	NST	●	●	●
Next Landing	After the car has arrived at the destination floor, if the car doors cannot open fully, it will close the doors and continue to run to the next floor until the doors can open fully and then restore normal operation.	NXL	●	●	●
Overload Holding Stop	When the car is overloaded, the doors remain open and a buzzer sounds.	OLH	●	●	●
Secret Call Service (IC card type)	The buttons of certain specified floors can only be registered via IC card.	SCS-IC	○	○	○
Automatic registration of elevator with 2 stop floors	For elevators with only two stop floors, when the elevator opens the door in response to the hall call, it automatically registers the unique and unauthorized car instruction of the destination floor.	TSAR	●	●	●

Note:

*1 Optional when AS is provided.

*2 Optional in the case where the number of landing stations is equal or more than 6 and SCS-IC feature is not provided.

Information and Display Features

●:Standard, ○:Optional, —:Not applicable

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Voice Announce Device	Voice announce device (Chinese) informs the passengers of related elevator information.	AA-N-S01 *1	○	○	○
Voice Announce Device	Voice announce device (Chinese and English in turn) informs the passengers of related elevator information.	AA-N-S02 *1	○	○	○
Voice Announce Device	Voice announce device (English) informs the passengers of related elevator information.	AA-N-S03 *1	○	○	○
Car Arrival Chime (Car)	The chime prompts the passengers the car has arrived at the destination floor. (The chime is installed on the car roof and floor)	AECC	○	○	○
Signal Interface Device	Outputs basic operation state signal of the elevator via this device	BA *4	○	○	○
Bypass Signal Light (Hall)	The landing indicator displays the elevator is in "Bypass operation" state.	BPL	●	●	●
Car Full Area Monitoring	When it is detected that the car area is occupied beyond the preset threshold, it only responds to the car instruction and does not respond to the hall call; at the same time, the icon of full-capacity operation is displayed on the hall call.	CFAM	○	○	○
Direction Arrows in Car	Indicates running direction with arrows in the car.	DAC	●	●	●
Extended Door-Open Button Light	When the Extended Door-Open button is pressed, the indicator light illuminates for certain period.	DKOL	●	●	●
Door-Open Button Response Light	The Door-Open button light illuminates at the same time when this button is pressed.	DOL	●	●	●
Elevator Counter/Timer	Record number of runs and running time of the elevator.	ECT	●	●	●
Fireman's Emergency Operation - Complete	The fireman's emergency operation is activated, the elevator runs to specified return floor, then the elevator outputs an in-place indicating signal.	FE-CP *2	○	○	○
FE Operation Signal Lamp in Car	When the elevator gets into FE operation status, the signal lamp in the car will indicate the status.	FELC *3	○	○	○
Fire Emergency Return - Completed	A CP signal is outputted after the FER running is completed.	FER-CP *4	○	○	○
Hall DKO Time State Display	When the hall DKO function is enabled, the HOLD icon is displayed on the hall call at the same time.	HDD *5	○	○	○
Interphone	In emergency, persons in car, on car top, or in pit can use this device to communicate with persons in machine room or monitoring room.	ITP *6	●	●	●
ITV cable(analog)	The cable used for video camera(analog) installed in the car for user to monitor the real image in the supervisory room.	ITV-A *7*8	○	○	○
ITV cable(digital)	The cable used for video camera(digital) installed in the car for user to monitor the real image in the supervisory room.	ITV-D *8	○	○	○
ITV cable(for SMOS)	The cable used for video camera equipped with SMOS system.	ITV-S *8	○	○	○
Overload Indication in Car	When the elevator is overloaded, the overload indicator lamp illuminates.	OLHL	○	○	○

Note:

*1 Only one of AA-N-S01/S02/S03 can be selected at most.

*2 Standard when FE is provided.

*3 Optional when FE is provided.

*4 Standard when FER is provided.

*5 Standard when HDE is provided.

*6 The customer is responsible for the cables from the machine room to the monitoring room and their installation.

*7 Nonstandard corresponding

*8 Select ITV-A, ITV-D or ITV-S.

Emergency Operation Features

●:Standard, ○:Optional

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Emergency Car Lighting	When normal lighting power supply fails, emergency car lighting is provided.	ECL	●	●	●
Power Failure Emergency Landing Device	When normal power supply breaks, this device will supply power to move the car to the nearest floor, level and open the doors, and allow the passengers to leave safely.	ELD *1	○	○	○
Alarm Bell	Press this alarm bell in emergency. The bell and interphone will sound.	EMB	●	●	●
Fireman's Emergency Operation	When a fire happens, fireman switch actions, a car returns to the predetermined evacuation floor, then door opens canceling all calls from landings or car, the car is available for fireman's use.	FE *2	○	○	○
Fire Emergency Return	When the Fire Emergency Return switch acts, all landing calls and car calls are cancelled, and the car immediately returns to predetermined floor and parks with door opened.	FER *3	○	○	○
Elevator Monitoring System	This system uses computers to monitor the operation and position of the elevator and provides operation instructions when necessary.	SmartEye *4	○	○	○

Note:

*1 When the capacity is not more than 5000kg, the distance between adjacent halls is not more than 10 m; in case of 10t, non-standard treatment is required.

*2 The elevator equipped with the function is not equivalent to complying with the relevant requirements of GB/T 26465, a standard for fire elevators.

*3 It should be considered that the elevator can return from the top floor to the evacuation floor within 60 seconds.

*4 Sign SmartEye contract with Shanghai Mitsubishi.

Specifications

Door Operating Features

●:Standard, ○:Optional

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Hatch Door Anti-collision	The detection device on the hall side detects whether there is an object approaching the hatch door through the sensor. When any object approaches the hatch door, it opens the door in reverse immediately.	ACHD	○	○	○
Light Curtain Protection	Light curtain protection with multiple light beam.	AMS *1	○	○	○
Car Door Anti-collision	The detection device on car side detects whether is an object approaching the car door through the sensor. When any object approaches the car door, it opens the door in reverse immediately.	CACF	○	○	○
Door Close Limit Switch on Start	When the car doors can not close completely, they will reverse and open.	CLTS	●	●	●
Direction Arrows on Hall	Indicates running direction with arrows on the hall.	DAH	●	●	●
Door-Close Button Response Light	The Door-Close button light illuminates at the same time when this button is pressed.	DCR	●	●	●
Sound and light prompt for closing the door	The opening/closing status prompt device is installed in the car, so that the freight forwarder can see the light prompt conspicuously at the hall, and the loud beep can be heard in the car and the hall.	DCSL	○	○	○
Personalized DKO Time	Relying on the EleCare APP for smart elevators, managers are allowed to adjust the DKO time of elevator door according to actual needs.	DOET	○	○	○
Extended Door-open Button	Press and hold this button can extend door-open time.	DKO-TB	●	●	●
Door Load Detect	If the car doors cannot fully open or close due to overload, the doors will act in reverse direction.	DLD	●	●	●
Not Door Open Feature	If car doors are blocked while opening, they will close immediately.	DONG	●	●	●
Automatic Door-open Time Adjustment	Automatically adjust door-open time according to landing calls or car calls.	DOT	●	●	●
Door Close Torque Up Control	When car doors encounter extra resistance while closing, the door system will automatically increase the torque.After the car has stopped at a station and the doors has opened, pressing Close button can make the doors to close immediately.	DTC	●	●	●
Expediting of Door Close	By pressing the Door Close button, the Door Closing Operation is immediately activated, and thus the traffic efficiency is improved.	EDC	●	●	●
Multi-beam Safety Edge	Safety edge with multi-beam. Provide double protection by multi-beam and safety edge. During door closing, when a passenger or object is detected, the doors will open again.	MBS *1	●	●	●
Door Nudging Feature - with buzzer	If the door-open time exceeds the predetermined value, it will give alarm sound to alert the passenger and try to close the doors.	NDG *3	○	○	○
Repeated Door-Close	If car doors are blocked while closing, the elevator will repeat the closing action until the debris is removed.	RDC	●	●	●
Reopen with Hall Button	During door closing, when hall calling button in the same direction is pressed, the doors will reopen.	ROHB	●	●	●

Note:
*1 AMS, MBS must choose one.

Group Control Features

●:Standard, ○:Optional, —:Not applicable

Feature	Description	Code	1C-2BC	2C-SM21	2C-4C-ITS-21
Strategic Overall Assignment	For group control elevators, the cars park dispersedly at the main station and middle floor.	OHS	—	●	●

Basic Specifications

Item	Specifications					
Capacity(kg)	2000		3000		5000	
Product type	standard		standard/forklift		forklift	
Roping	4:1					
Speed(m/s)	0.5	1.0	0.5	1.0	0.5	1.0
Coping Range(mm)	1300≤AA≤2000		1800≤AA≤2800		2000≤AA≤2800	
	2000≤BB≤3000		2140≤BB≤3200		2800≤BB≤3600	
Door Opening Way	2S/2CO			2CO		
Door Opening Type	1D1G/1D2G/2D2G					
Leveling Precision(mm)	≤ ± 10					
Machine Room Noise[dB(A)]	≤ 80					
Max. Startup Frequency (times/hour)	≤ 120					
Max. Travel Height (m)	60					
Max. Number of Halls	16					
Control Mode	VFH-LA/VFJ-L					
Operation Mode	1C-2BC, 2C-SM21, 2-4C-ITS-21					

Civil

Item	Specifications			
Capacity(kg)	2000	3000	3000	5000
Product type	standard	standard	forklift	forklift
Speed(m/s)	0.5/1.0	0.5/1.0	0.5/1.0	0.5/1.0
Inner Width of Car-AA(mm)	1500 × 2620(2CO)	2200 × 2500	2200 × 2500	2500 × 3480
	1800 × 2140(2S)			
Door Opening Width-JJ(mm)	1500	1800	1800	1800
Door Opening Height-HH(mm)	2200	2200	2400	2400
In-car Clear Height-HL(mm) *	2200	2200	2400	2400
Hoistway Size AH × BH(mm)	2750 × 3100(2CO)	3450 × 2980	3450 × 2980	3700 × 3960
	2750 × 2700(2S)			
Machine Room Size AM × BM(mm)	2850 × 3100(2CO)	3500 × 2980	3500 × 2980	3750 × 3960
	2850 × 2700(2S)			

Note:
*Non-standard confirmation is required when the car interior height exceeds HH+100.

