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**HOPE-II G**

Freight Elevator



[www.smeccn.com](http://www.smeccn.com)

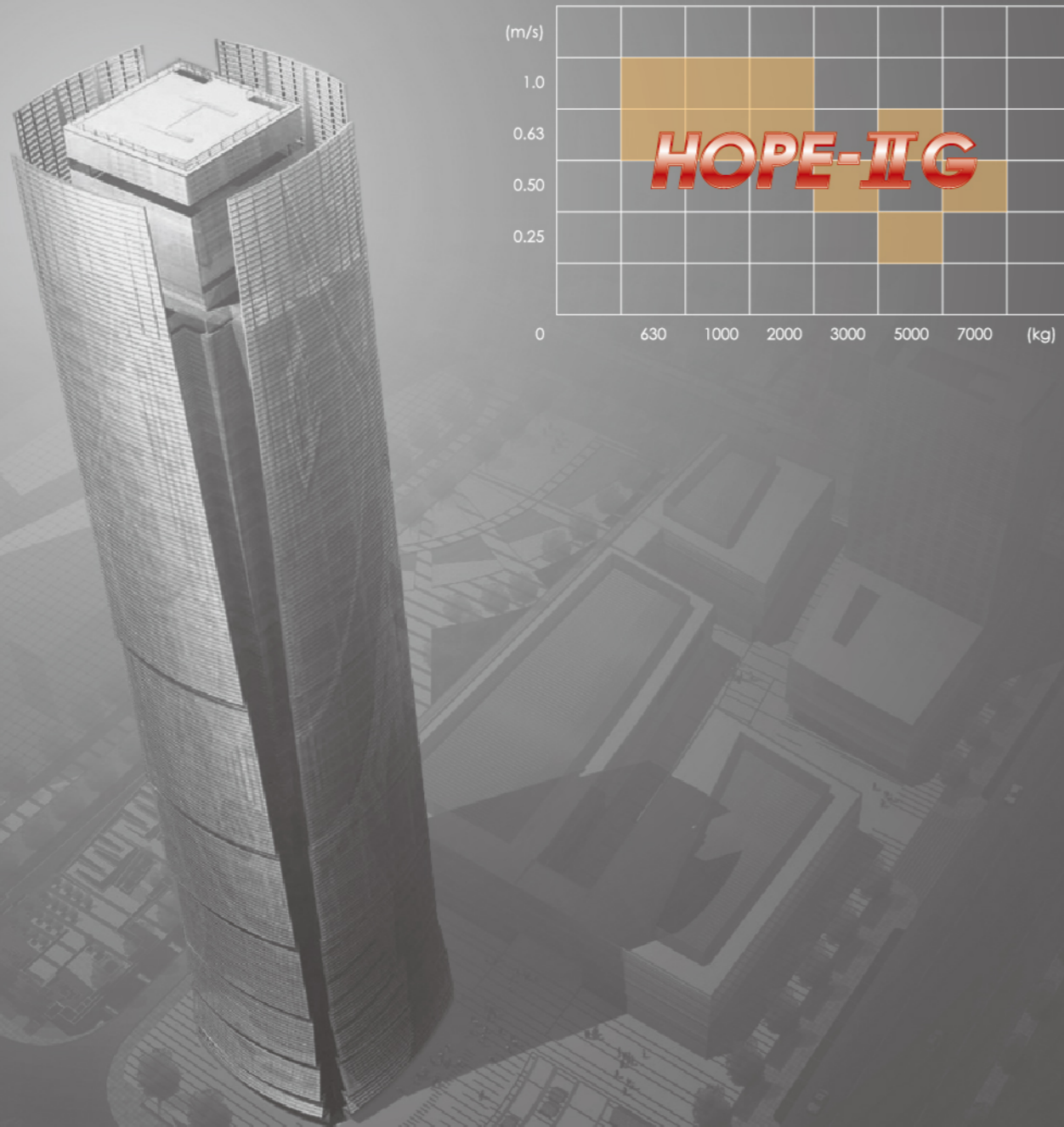


Specifications subject to change without notice  
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## Handle Complicated Matters With Great Ease

The HOPE-IIG freight elevator no longer adopts traditional general frequency converter driving technology, but combines the VVVF vector transformation formerly used in SMEC passenger elevators with high-power driving system. Thus the technical and professional level of the freight elevator is greatly raised, and make HOPE-IIG operate as smooth and comfortable as passenger elevator. At the same moment, the utilization of intelligent high-power module (IPM) protects the power module more effectively with the swift protection circuit, which further promotes the reliability of the driving system.

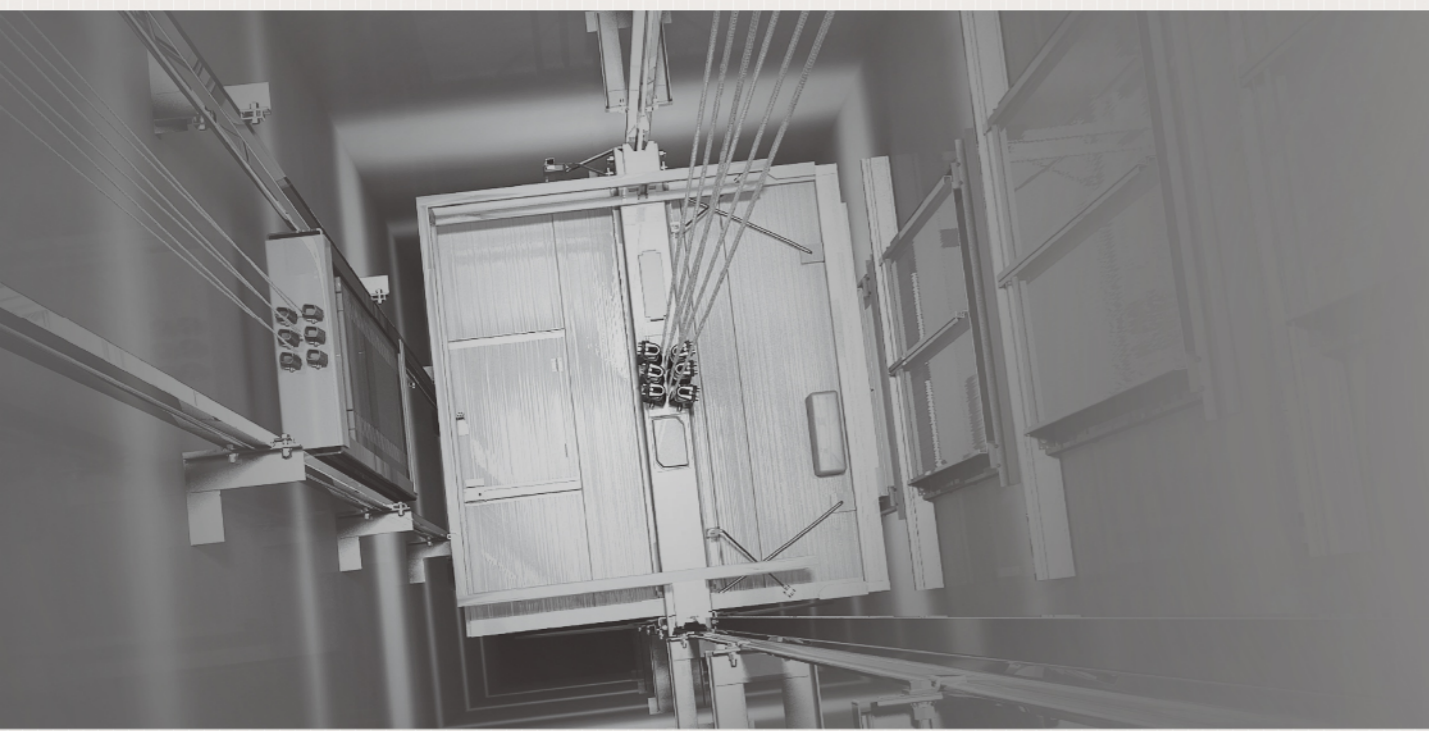
HOPE-IIG freight elevator intergrates various cutting-edge technologies, and operates with high efficiency and energy saving. The utilization range varies from different levels of load capacity, from 640kg to 7000kg.



### Technical Assistance, Four Major Technologies

- Safe And Reliable Door Machine System
- Professional AC VVVF Technology
- CANBUS Datum Network Control Technology
- Full-Digital Control And Motor Driving Technology

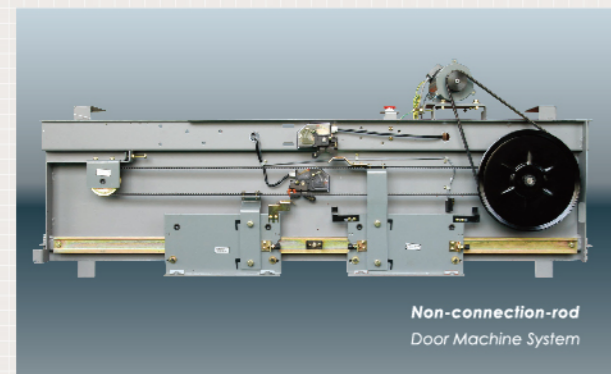




# Technical Assistance **4** Major Technologies

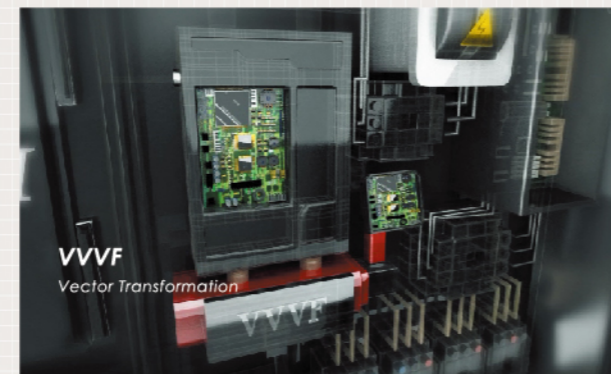
## Safe And Reliable Door Machine System

The AC VVVF door machine system is adopted without connection rod, and the system also intergrates the synchronous door machine driving technique of passenger elevator, thus easily achieves the car door drive of different door open sizes; utilizes the double close-circuit control system and AC VVVF technique at the same time, to drive and control various door systems at the best torque, the reliability of door open and close is further improved, and door system of HOPE-IIG is safer and more humanistic.



## Professional AC VVVF Driving Technology

The HOPE-IIG freight elevator no longer adopts traditional general frequency converter driving technology, but combines the VVVF vector transformation formerly used in SMEC passenger elevators with high-power driving system. Thus the technical level and professional level of the freight elevator is greatly raised, and make HOPE-IIG operate as smooth and comfortable as passenger elevator. At the same moment, the utilization of intelligent high-power module (IPM) protects the power module more effectively with the swift protection circuit, which further promotes the reliability of the driving system.



## CANBUS Datum Network Control Technology

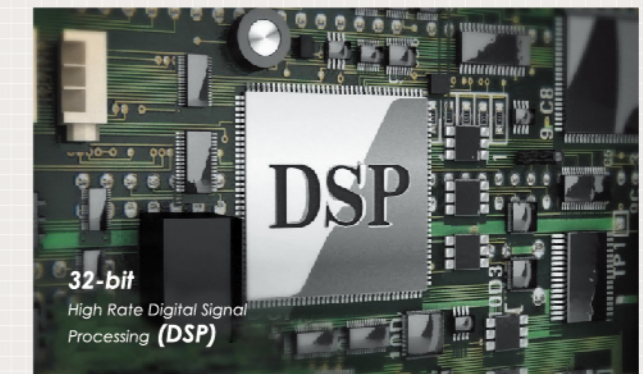
Based on filed bus, CANBUS datum network control is adopted, and brings features of high reliability, high transmission rate, outstanding real-time performance, large amount of transmission data and flexible data transmission.

The real-time elevator load will be carried out precisely, according to the inspection result, torque will be controlled in advance to the elevator to avoid the start shock; the real-time torque control is adopted during the operation to make the elevator operate smoothly at all time.



## Full-Digital Control And Motor Driving Technology

Combining 32-bit CPU, 32-bit high rate Digital Signal Processing (DSP), Field Programmable Gate Array (FPGA) with thousands of gate circuit and world-class Surface Mounting Technology, to achieve the full digital control and motor driving to further improve the control function and reliability of the system, completely ensures the comfort and safety of the elevator riding.



## Car and Car Ceiling

Freight elevators from Shanghai Mitsubishi Elevator are not only firm and durable, but also satisfying for specific needs of carried cargos; different decorating styles can be introduced to match with various architectural needs.

The car design adopts the steel sheet bending shaping technique to improve the overall strength, rigidity as well as the esthetic aspects of the car; the simple and bright decoration style keeps the traditional characteristic of coated steel plate, and adds hairline stainless steel plate, operation panel and landing door calling with oval button. The axial-flow fan is adopted for the ventilation devices.



## Car Operation Panel and Landing Indicator



### Decoration Type

Specification	Material	Note
Car Ceiling	Coated Steel Plate	Standard
	Ceiling Tube Fluorescent Light	
	Axial-flow Fan	
Car Door and Car Wall	Coated Steel Plate	Standard
	Hairline Stainless Steel	Option
Landing Sill	Cast Iron	Standard
Car Floor	Bean-like Flower Pattern Steel Plate	Standard

### Decoration Type

Specification	Faceplate	Faceplate	Note
CBC-T100	Hairline Stainless Steel	Stainless Steel Cover	Standard
PIC-T100	Hairline Stainless Steel	Stainless Steel Cover	Standard

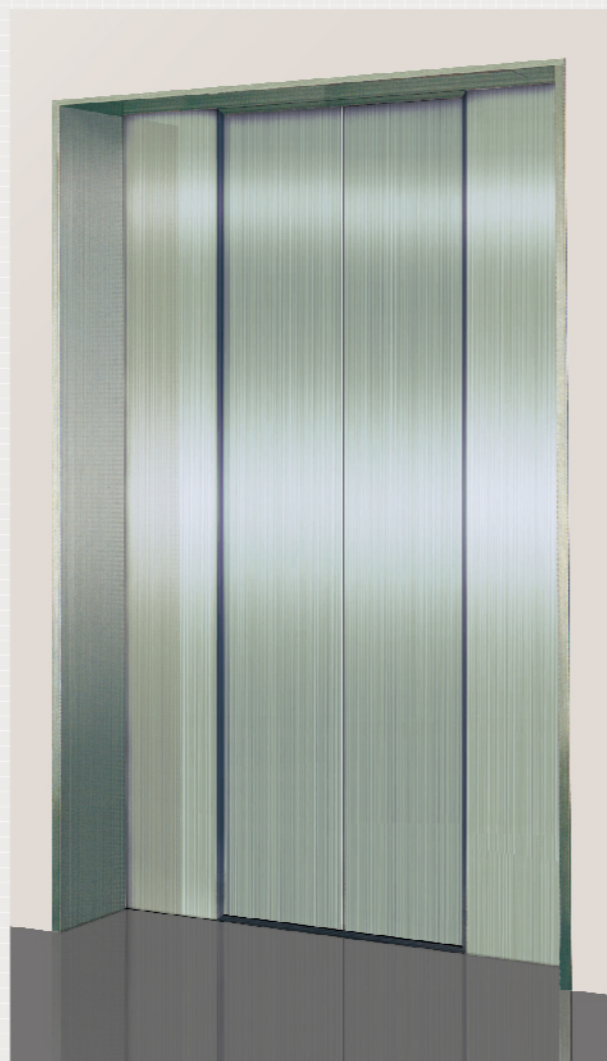
Note: Only configure front door in-car operation panel for 1D2G or 2D2G.

## Hall Door and Jamb

**E-102** Narrow Jamb (Standard)  
Door Open Mode: Double-twisted Mode (2S)



**E-302** Splayed Jamb (10°) (Option)  
Double-twisted Center-opened Mode (2CO)



### Decoration Type

Specification	Faceplate	Note
Hall Door	Painted Steel Sheet	Standard
	Stainless Steel Hairline	Option
Jamb	Painted Steel Sheet	Standard
	Stainless Steel Hairline	Option

## Basic Specification

Item	Specification Content				Note
Speed(m/s)	1	0.63	0.5	0.25	
Capacity(kg)	630	630			
	1000	1000			
	2000	2000			
			3000		
		5000		5000	
Lifting Height TR (m)			7000		For Non-standard
	2.8-60			3.1-60	
		2.8-60	2.9-60		When load capacity is 630kg, 1000kg, 2000kg, 3000kg.
		3.1-60	3.1-60		When load capacity is 5000kg, 7000kg.
Num. Stops	2-16				
Operation Mode	1C~28C				
Control Mode	VFEA				
Door Opening Type	1D1G				Non-standard for 1D2G, 2D2G
Door Opening Mode	Double-twisted Center-opened Mode				JJ>1500 or Cap=2000 and AA=1500
	Double-twisted Mode				JJ<1500 or Cap=2000 and AA=2000
Door Opening Direction	Left opened, Right opened *				* Double-twisted Mode
Dynamic Power	380V 50Hz 3 phases, 5 lines				
Lighting Power	220V50Hz				
In-car Clear Height	2200				When load capacity is 630kg, 1000kg, 2000kg, 3000kg
	2400				When load capacity is 5000kg, 7000kg
CWT Safety Gear	Not Available				When load capacity is 630kg, 1000kg, 2000kg, 3000kg
	Available				When load capacity is 5000kg, 7000kg, CWT safety gear is essential.
CWT Position	Flank Placed				
Min. Landing Height	2800				When 1D1G or 2D2G, door open height is 2100mm and steel nose is configured.
	2910				When 1D1G or 2D2G, door open height is 2100mm and steel nose is configured.
	2900				When 1D1G or 2D2G, door open height is 2200mm and steel nose is configured.
	3010				When 1D1G or 2D2G, door open height is 2200mm and steel nose is configured.
	3100				When 1D1G or 2D2G, load capacity is 5000kg, 7000kg and steel nose is configured.
	3210				When 1D1G or 2D2G, load capacity is 5000kg, 7000kg and steel nose is configured.
Landing Display Range	B1, B2, B3, B, G, M, -1, -2, -3, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48				

# Feature List

Func. Code	Func. Name	Func. Description	1C-28C	2C-SM21	3-4C ITS-21	3-8C ITS-21
<b>■ Control Safety Protection Feature</b>						
ARL	Automatic Landing with Rheostatic Leveling	When the elevator is in the door zone, but outside of the re-leveling zone, it will automatically level.	\$	\$	\$	\$
AST	Elevator-hindered Stall Protection	When traction steel rope is slipping for the pre-set time, the elevator will stop running.	\$	\$	\$	\$
BTUP	Brake Redundant Protection	When the elevator double-brake goes wrong, the other braking feature can also carry out the braking function.	\$	\$	\$	\$
ESC	Electrical Circuit Safety Protection	The parallel-connected device stops elevator running, when activated.	\$	\$	\$	\$
HAND	Service Handling	The running mode used by servicemn for inspection and reparation.	\$	\$	\$	\$
LWS	Load Weighing Start	The car may safely and smoothly start up by adjusting starting torque according to the load in the car.	\$	\$	\$	\$
OCP	Over-Current Protection	The elevator stops operating when electric current is detected too high through rectifier or inverter device.	\$	\$	\$	\$
OSP	Over-Speed Protection	The elevator stops operating when operation speed exceeds the limit.	\$	\$	\$	\$
PPF	Power Failure Protection	The elevator stops operating when errors, such as phase open or failuer or undervoltage, is detected.	\$	\$	\$	\$
OVP	Over-Voltage Protection	The elevator stops operating when voltage is detected too high through rectifier or inverter device.	\$	\$	\$	\$
RSP	Reverse Operation Protection	The elevator stops operating when a reverse movement is detected.	\$	\$	\$	\$
SC	Selector Correction	Make correction to the selector during the operation of elevator.	\$	\$	\$	\$
SFL	Safe Parking	When a car stops outside of door zone due to any trouble, the controller will make a safety test. If it meets the requirements of start, the car will run to the closest landing, to park for opening the door.	\$	\$	\$	\$
SO	Stop Open	When a car lands at a hall, the car will start opening after the car stops completely.	\$	\$	\$	\$
THMF	Thermo-Detection in Invertor	The elevator stops operating when the invertor device is detected over heated.	\$	\$	\$	\$
TSD	Terminal Coercive Slowdown	The car is coercively slowdown by the system to reach normal landing, if the speed does not decrease to the limit when the car reaches the terminal.	\$	\$	\$	\$
USP	Under Speed Protection	The elevator stops operating when the speed is detected under limit.	\$	\$	\$	\$

**■ Operation And Service**

ABP	Automatic Bypass	When the car load exceeds 80% of rated load, it ignores other hall calls automatically to avoid useless stop and increases the efficiency of car traveling.	○	○	○	○
AS	Attendant Service	The normal operation of elevator can be handled by an attendant.	○	○	○	○
BP	Bypass	Bypass all hall calls when the attedant serves and activates the 'Bypass' button.	○	○	○	○
CCBK	Car Computer Back Up Operation	When pc on car station has abnormal condition, the car will stop at the nearest floor and be unable to restart.	\$	\$	\$	\$
CCC	Reversal Car Call Canceling	Under full-automatic mode, when a car finally responds to the last car call, all other registered car calls behind the car service direction will be cancelled simultaneously.	\$	\$	\$	\$
CFO-A	Auto-Shutdown Of In-Car Venting Device	When elevator stands by without any direction for a while, the in-car venting device will automatically shut down, to save energy.	○	○	○	○
CLO-A	Auto-shutdown Of In-car Lighting	When elevator stands by without any direction for a while, the in-car venting device will automatically shut down, to save energy.	○	○	○	○
EFD	Elevator Fault Self Diagnosis	Self diagnose the errors and flauts during the elevator operation.	\$	\$	\$	\$
EXIT SW	Emergency Exit Switch	The switch is used for test the emergency exit condition.	○	○	○	○
FCC-P *1	Auto Cancel Of In-car Error Command	If press the in-car command button by mistake, just press this button twice to cancel the command.	○	○	○	○

Func. Code	Func. Name	Func. Description	1C-28C	2C-SM21	3-4C ITS-21	3-8C ITS-21
<b>■ Operation And Service</b>						
FMR	Floor Height Auto-Measurement	Automatically measure and save the landing height.	\$	\$	\$	\$
HCBK	Hall Computer Back Up Operation	When the hall station has been troubled, the car will stop at the nearest floor and is unable to restart.	\$	\$	\$	\$
HOS	Hall Out-of-Service Switch	RUN/STOP operation of an elevator can be controlled by using a key switch installed in the specified elevator hall.	\$	\$	\$	\$
KNDG	Forced To Close Door	If the period for keeping the door open exceeds, the pre-set time, the elevator will temporarily disregard the action of the non-contact door sensor to force the door closed.	\$	\$	\$	\$
NST *2	Non-Service Warning	Assigned landing calls are cancelled, and in-car command is saved, when landing calls and in-car command are registered, but the elevator does not serve at pre-set time. Abnormal light is lit, with ringing of alarm bell.	\$	\$	\$	\$
NXL	Parking On Next Landing	When an elevator arrives at destination floor, but can not fully open its door, it would run to next lower floor until the door can open fully, and then it restores its normal running.	\$	\$	\$	\$
OLH	Overload Warning	In case of overload of car, the elevator would keep its door open, and the buzzer gives sound.	\$	\$	\$	\$

**■ Door Operation Functions**

CLTS	Door Close Limit Switch on Start	When the closing car door is unable to be fully closed, the doors will reopen.	\$	\$	\$	\$
DAH	Direction Arrows on Hall Door Closed Button	Arrows applied to indicate the operation direction of elevator.	\$	\$	\$	\$
DCR	Responding Indication	When pressing "Close" button, this button lamp is lit at the same time.	\$	\$	\$	\$
DKO-TB	Door-Open Delay Button	To press this button will prolong the period for keeping the door open.	\$	\$	\$	\$
DLD	Door Load Test	If the door can not be fully opened or closed due to overload, the elevator door will move in the reverse direction.	\$	\$	\$	\$
DONG	Door Opening Resistance Control	If the door opening is hindered, the door will be closed at once.	\$	\$	\$	\$
DOT	Auto Adjustment For Door-Kept-Open Period	Automatically adjust the period for keeping the door open according to the landing call or in-car command.	\$	\$	\$	\$
DTC	Door-Closed Torque Control	Torque is increased by the door system automatically when extra obstruction force is applied to the closing car door.	\$	\$	\$	\$
EDC	Prompt Close Door	After parking and open the door, the elevator will close the door promptly once pressing the close button.	\$	\$	\$	\$
MBS	Multi-Beam Screen Safety Shoe	The door can make use of the double protection of the multi-beam screen and safety edge. During door closure, if it detects any passenger or object, the elevator will re-open the door.	\$	\$	\$	\$
NDG *3	Bell-Ring Forced Close Door	If the period for keeping the door open exceeds the pre-set time, the elevator will give warning sound to remind the passengers, and try to close the door.	○	○	○	○
RDC	Re-Close Door	If the door closure is hindered, the elevator will close the door repeatedly till the foreign matter is removed.	\$	\$	\$	\$
ROHB	Re-Open Door At Local Landing	In the process of door closing, if pressing the call button at the same landing, the elevator will open the door again.	\$	\$	\$	\$

**■ Emergency Operation Functions**

ECL	Car Emergency Lighting	When the normal lighting power is shut, the car emergency lighting will be provided at once.	\$	\$	\$	\$
ELD *4	Emergency Parking In Power Failure	When the normal power supply fails, the elevator is powered by its in-built rechargeable batteries, to allow the car to run to the nearest landing, and opens the door, the firemen will control the elevator running.	○	○	○	○
EMB	Alarm Bell	In emergency, press this bell, which will make a sound also in talk system.	\$	\$	\$	\$
FE *5	Operation In Fire Fighting	When the firemen switch is actuated, it will cancel at once all landing calls and in-car commands. And after the elevator returns to the pre-set landing, and opens the door, the firemen will control the elevator running.	○	○	○	○
FER *5	Fire Emergency Return	When the fire emergency return switch is actuated, it will cancel all landing calls and in-car commands, and the elevator returns to the preset landing, and opens the door.	○	○	○	○
SMOS-II *6	Elevator Monitoring System II	The system applies computer to monitor the operation and position of elevator, and provides running command if necessary.	○	○	○	○

Func. Code	Func. Name	Func. Description	1C-28C	2C-SM21	3-4C ITS-21	3-8C ITS-21
■ Signal And Display Functions						
AAN-S01*8	Voice Announcer	The voice announcer will inform passengers of relevant elevator message in Chinese.	○	○	○	○
AAN-S02*8	Voice Announcer	The voice announcer will inform passengers of relevant elevator message in Chinese and English in turn.	○	○	○	○
AAN-S03*8	Voice Announcer	The voice announcer will inform passengers of relevant elevator message in English.	○	○	○	○
AECC *9	Car Arrival Electronic Resonator	The electronic resonator will remind passengers of the car arrival at the destination landing (the resonator is fixed on the top and bottom).	○	○	○	○
AUTL	Landing Auto Running Indication	The landing display indicates the elevator under the auto operation condition.	○	○	○	○
BA *7	Signal Interface Device	Through this device, to output the signals of the elevator's basic running conditions.	○	○	○	○
BPL	Landing Non-Stop Running Indication	The landing display indicates the elevator under the non-stop operation condition.	○	○	○	○
DAC	In-Car Running Direction Indication	Use the arrows set in car to indicate the running direction.	Ⓢ	Ⓢ	Ⓢ	Ⓢ
DKOL	Extended Door-Opened Button Responding Indication	When pressing "Extended Open", the button lamp is lit for a certain period of time.	Ⓢ	Ⓢ	Ⓢ	Ⓢ
DOL	Door Opened Button Responding Indication	When pressing "Open" button, this button lamp is lit at the same time.	Ⓢ	Ⓢ	Ⓢ	Ⓢ
FE-CP *10	Fire Fighting Operation In Position	The fire fighting function starts, and the elevator runs to the pre-set return landing. At this moment, the elevator will send an in-position mark signal.	○	○	○	○
FELC *11	In-Car FE Operation Indication	When the elevator comes into anti-fire service, this condition will be indicated in the car.	○	○	○	○
FER-CP *12	Fire Emergency Return Results	At the end of fire emergency return operation, it will output an end signal.	○	○	○	○
GC *9	Approaching Gong or Chime (car)	The Approaching Gong or Chime prompts passengers in the car of the arrival floor (The Chime is mounted at top and bottom of the car)	○	○	○	○
ITP *13	Intercom Device	In case of emergency, the people in the car, on the car top or in the pit can communicate with the people in machine room or monitor room with intercom device.	Ⓢ	Ⓢ	Ⓢ	Ⓢ
ITV *14	ITV Cable	The cable is used for in-car video device, supplied by ITV.	○	○	○	○
ITV-S *15	Video Camera / Monitoring Function	Only video camera / monitoring function, or when selecting SMOS-II, attached with camera / monitoring function. SMEC will provide the corresponding cable for machine room, hoistway, and in-car.	○	○	○	○
OLHL	In-Car Overload Indication	When the elevator is overloaded, the overload indication lamp is lit.	○	○	○	○

Note:

- \*1 Available when SCS-IC is not configured.
  - \*2 Abnormal signal is outputted from SMOS-II.
  - \*3 Need voice announcement devices.
  - \*4 When load capacity is 630kg or 1000kg, adjacent landing distance shall not exceed 10m; When load capacity is 2000kg or 3000kg or 5000kg or 7000kg, adjacent landing distance shall not exceed 5m.
  - \*5 Only one feature between FE and FER can be selected. It should be taken into consideration that the elevator can return to the evacuating landing from the top landing within 60 seconds.
  - \*6 Able to be monitored by SMOS-II.
  - \*7 BA output, collector open output; the output signals include up stroke, down stroke, comprehensive trouble, landing encoding signal; the output terminals are seated in the control cabinet of the machine room. No RS232/RS458 output.
  - \*8 Only one can be selected among AAN-S01, AAN-S02 and AAN-S03.
  - \*9 Only one can be selected between AECC and GC.
  - \*10 Standard feature when FE is configured, output from control panel.
  - \*11 Optional feature when FE is configured.
  - \*12 Standard feature when FER is configured, output from control panel.
  - \*13 Clients are responsible for cables from machine room to supervision room and its installation.
  - \*14 Only one can be selected between ITV and ITV-S.
  - \*15 With SMOS-II and only one can be selected between ITV and ITV-S.
- Ⓢ Standard  
○ Optional

# Basic Civil Construction

Item	Specification Content						Note
Load(kg)	630	1000	2000	3000	5000	7000	
Inner Width of Car -AA(mm)	1100	1300	1500	2500	2500	3000	
		1500	2000				
			2500				
Inner Depth of Car -BB(mm)	1590						1D2G or 2D2G, and in-car width is 1300
			2540				1D2G or 2D2G, and in-car width is 1500
	1320						1D1G
	1240						1D2G or 2D2G
		1670					1D2G or 2D2G, and in-car width is 1300
			2620				1D2G or 2D2G, and in-car width is 1500
		1400-2000					In-car width is 1500
			2100-2750				In-car width is 2000 or 2500
Distance from Guiderail to Car Sill -EE(mm)			1249-1574				1D2G or 2D2G, and in-car width is 2000 or 2500, and EE=BS/2
			1164.5-1489.5				1D1G, and in-car width is 2000 or 2500, and EE=BS/2
		994					1D2G or 2D2G, and in-car width is 1300
			1469				1D2G or 2D2G, and in-car width is 1500
		899-1199					1D2G or 2D2G, and in-car width is 1500, and EE=BS/2
			1289-1799				1D1G, and EE=BS/2
	774.5			1814.5	2124.5		1D1G
	819			1899	2199		1D2G or 2D2G
		949					1D1G and in-car width is 1300
			1424.5				1D1G and in-car width is 1500
Inner Depth of Hoistway -BH(mm)	814.5-1114.5						1D1G and in-car width is 1500, and EE=BS/2
			1204.5-1714.5				1D1G and EE=BS/2
	2858-3508						1D2G or 2D2G, and in-car width is 2000 or 2500, and BH=BB+758
	2650-3300						1D1G, in-car width is 2000 or 2500, and BH=BB+550
		2348					1D2G or 2D2G, and in-car width is 1300
			3298				1D2G or 2D2G, and in-car width is 1500
		2158-2758					1D2G or 2D2G, and in-car width is 1500, and BH=BB+758
			2938-3958				1D2G or 2D2G, and BH=BB+758
	≥1900			≥4070	≥4550		1D1G
	1998			4158	4758		1D2G or 2D2G
Door Opening Width -JJ(mm)	≥2300						1D1G and in-car width is 1300
		≥3170					1D1G and in-car width is 1500
	950-2550						1D1G and in-car width is 1500, and BH=BB+550
			2730-3750				1D1G and BH=BB+550
	1100	1300		1800	1800	2200	
Door Opening Height -HH(mm)		1500					In-car width is 1500 or 2000
		1800					In-car width is 2500
	2100			2200	2400	2400	
	2100						In-car width is 1300
	2200	2100					In-car width is 1500
		2200					In-car width is 2000 or 2500

Item	Specification Content						Note
Car Guiderail Distance -BG(mm)	1218			2660	2684	3250	
		1460					In-car width is 1300
		1660	1660				In-car width is 1500
			2160				In-car width is 2000
CWT Guiderail Distance -WG(mm)			2660				In-car width is 2500
	900	900	1200	1200	1200	2000	
CWT Width -WW(mm)	130		260	270	400	340	
		210					In-car width is 1300
Pit Depth -PD(mm)		180					In-car width is 1500
	≥1500	≥1500	≥1500	≥1500	≥1500	≥1750	
Overhead Height -OH(mm)	≥4450	≥4500	≥4600	≥4700	≥5000	≥5600	
	≥2100			≥3580	≥3660	≥4200	
Inner Width of Hoistway -AH(mm)		≥2400					In-car width is 1300
		≥2500	≥2700				In-car width is 1500
			≥2900				In-car width is 2000
			≥3450				In-car width is 2500
Inner Width of Machine Room -AM(mm)	≥2800			≥4100	≥4100	≥4200	
		≥3100					In-car width is 1300
	≥3200	≥3400					In-car width is 1500
			≥3500				In-car width is 2000
Inner Depth of Machine Room -BM(mm)			≥4150				
	≥4100	≥4200		≥5500	≥5500		
			≥4900				
			≥5500				
					≥4550	1D1G	
					≥4758	1D2G or 2D2G	

### Instructions:

- Analysis of environmental effects in product design
  - Product conforms to the relative requirements of laws and regulations
  - The material used in the product conforms to the relative requirements of laws and regulations
  - The suppliers of the product components conforms to the relative requirements of laws and regulations
- Main landing shall not be the top landing.
- The min. landing height is 2800 for 1D2G, and is standard when front and rear door landing height is 1800.
- In the case as follows:
  - CAP=1000kg, when AA=1500, and BB>1430
  - CAP=2000kg, when AA=2000 or 2500
  - CAP=3000kg, and when BB>2180

The area of car exceeds the requirements of Form 1 in GB7588-2003 Clause 8.2.1, but according to the needs by Clause 8.2.2 in GB7588-2003, clients need to satisfy the following two targets to meet the elevator using requirements:

A: It shall be exclusively used in delivering light weight cargo. The volume of car ensures that the overall mass of the cargo does not exceed the rated load capacity when the car is fully loaded.