

GTEC188

Elevator Control System

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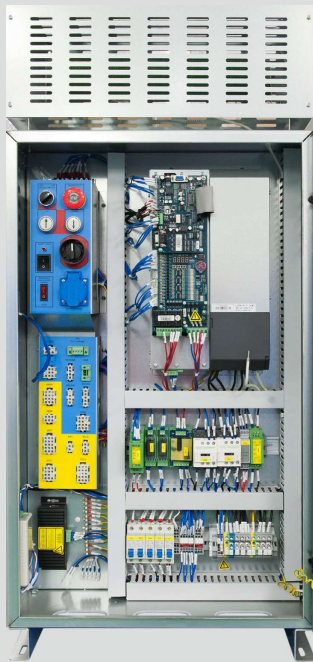
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GTEC188-N5 Elevator Control System

Control Cabinet

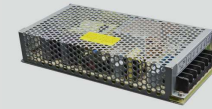


Machine Room Control Cabinet
GTEC188-MMR02



Machine Room Less control Cabinet
GTEC188-MRL02

Control Cabinet Main Components



Switch Power Supply EDR-150-24



Brake board BRK-ADJ



Inverter GTEC188-N5

Control Cabinet performance

Rated Speed	≤ 10 meters/second
Functional Scope	Machine room: 8KW,13KW,17KW, 18.5KW, 23KW, 34KW
Voltage	Single-phase 120VAC Three-phase 280VAC
Frequency	50/60Hz Range: -4%- +7%
Group Control	8 EA group controls without additional group control cabinets
Floor	55 floors per unit, up to 440 floors (when 8 units are under group control)
Applicable Elevator Type	Machine Room ,Machine Room Less ,Homelift
Temperature in the machine room	-10°C ~ +40°C
IP Code	IP20
Communication Type	Parallel communication, serial communication (group control CAN, lift car CAN, outbound CAN), RS485, RS232
Safety Standard	ASMEA17.1:2019/CSA B44: 19 ASMEA17.5/CSAB44.1: 19
CSAUL508	Safety Certification CSAUL508
Overall Dimensions	Machine Room Control Carbinet 650*282*1653 (5KW,13KW,17KW) 750*382*1933 (18.5KW, 23KW, 34KW)
Cabinet material	Galvanized sheet

C Product Features

- » Modern techniques
- » Adopt high-performance 32-bit microprocessor, with ideal network communication and integrated information Executive functions
- » Advanced vector variable frequency speed control technology
- » Automatically generate the optimal deceleration curve based on distance control principle to improve elevator efficiency
- » Multiple CPUs are distributed to complete independent elevator functions, and the control system has fast response speed and excellent performance
- » Multimedia information transmission
- » Group control for up to 8 elevators
- » Precise Real-time clock, rich time-sharing control functions
- » Simplified external wiring method, safe and reliable
- » Easy to use
- » Image monitoring enables the service center to have a clear understanding of elevator services at a glance
- » Easy floor service management
- » simple and easy to Installate and debug
- » Compact structure, small size, and simple wiring
- » A comprehensive distress system that allows for video calls from inside of car
- » Safe and reliable
- » Multiple security protection, compliant with ASMEA17.1:2019/CSAB44:19B standard
- » Possessing strong environmental adaptability and complies with IEC12015 and IEC12016
- » System power on self check to prevent faulty operation
- » Anti insertion design and connection locking function to prevent insertion errors and looseness
- » Multiple logic comprehensive judgment to prevent the car from squatting or hitting the top
- » Automatic handling of fire alarms, smoke, power outages, and nearby evacuation
- » Energy saving
- » When there are no service requirements

Standard function Table 1

Function	Function description
ASME A17.1:2019 / CSA B44.19 Mandatory function	
Door open button	When the elevator stops in the door area, press the door open button and the elevator door will open
Alarm button	If the elevator is faulty, pressing the alarm button can trigger the alarm to sound the alarm
Emergency recall	In case of emergency or maintenance, the elevator is operated up and down through the controller
INSPECTION RUN	In emergency state or maintenance, the elevator is operated up and down through the top operation panel of the car, and the running speed is adjustable
Car lights, fan automatic control	If the elevator has no command and the HB registration exceeds the specified time, the car lights and fans will automatically turn off
Safety light curtain + touch PLATE	When the elevator door is closed, the safety light curtain or safety touch plate detects the obstacle, and the elevator door automatically opens to prevent clamping
Reverse door control(Limiting closing force)	When closing the door, the reverse resistance is greater than the limit value, and the lift door is reopened
	Video communication with Car
Lockable master switch of Control cabinet	The control cabinet is equipped with a lockable main switch to prevent misoperation
Out-of-phase protection	When the phase sequence is wrong or missing, the phase sequence relay will operate and the elevator will stop running
Emergency lighting	When power off, the emergency power supply for car lighting, alarm button and intercom provide the power
Car accidental movement protection	When the car moves unexpectedly, the protection device protects and prevents shear
Overspeed protection	When the speed of the elevator exceeds the specified speed, the speed limiter works, the electrical safety circuit is disconnected, the safety clamp works, and the elevator car brake stops on the guide rail
Car function	
Car operation panel with LCD display	An LCD display is used inside the car
Door close button	When the elevator stops in the door area, press the door close button and the elevator will close
Intercom button	System intercom
Overload protection	When overloaded, the elevator doesn't close, and the buzzer sounds
Auto car fan	The fan is automatically turned on when an incoming call is received. When no one calls within the setting time, the fan is automatically turned off

Car door function	
Automatic door	When the elevator runs to the door area, the elevator automatically opens and closes the door
Open the door after HB calls	When the elevator door is not fully closed, the hall button is pressed and the elevator door will reopen
Special opening hours on main floor	The opening time of the main floor can be set separately, which is especially suitable for the hotel lobby
Opening and closing times are adjustable on all floors	The opening and closing times of each storey can be adjusted independently
Open and close reminder	When opening and closing the door, the button light is lit to remind passengers to pay attention to the operation

Standard function Table 2

Function	Function description
Gate function	
Scroll to show the running direction	When the elevator is running, the display outside the hall shows the direction of movement
Car Gong	There is a gong, it will sound when car arrives at any station
Reverse automatic cancellation	When the elevator runs to the terminal landing or the direction of operation changes, all the reverse direction instructions are automatically cancelled
Base station return	When there is no internal or external call, the car automatically returns to the base station after the set time
bypass when full load	When the car is fully loaded, it no longer responds to the calls outside the hall
Main floor can be changed	Through parameter setting, you can change the setting of the main landing station at will
Front and rear doors service floor Settings	The system selects front or back door floor service as required
Late closing	When the door is open, long press the HB call button, the door is not closed which is convenient for users to move the goods
Emergency operations and service functions	
Run time accumulation	The cumulative run time is displayed on the handheld operator
Run times the total	The cumulative number of runs is displayed on the handheld operator
Gate system test	Press the emergency stop switch on the top of the car, open the inspection switch, press the up/down button to open/close the car door accordingly
Fire emergency return	When the fire alarm signal is effective, the elevator does not respond to all internal and external calls, and automatically returns to the designated floor immediately, opens the door, and stops the elevator
Fire operation instruction	When the elevator is in fire operation, the status will be displayed in the car
Well position self-learning	The information of each floor and terminal station of the well is automatically measured, and automatically stored and recorded
Parallel light switch	You can switch it on or off through the power box in the equipment room
Special control function	
Door lock short-circuit protection	In the automatic operation mode, the elevator recognizes whether the door lock is abnormal every time the door is opened
Traction monitoring	Detection of motor gridlock, motor overcurrent, power supply overvoltage encoder fault, drive module heat, motor overheating and other parameters to ensure the normal operation of the tractor
Double-click to cancel the call	When the user makes an incorrect call, press the call button of the floor again to cancel the call
System self-test	After power-on, the control system checks itself first. When all parts are normal, the system enters normal service

If the lift door isn't open, it will automatically proceed to the next station	If the floor door fails to open several times, the elevator will automatically go to the next storey
Stop nearby automatically when the fault occurs	When the elevator has a general signal failure (except for safety circuit and power supply failure), the elevator will automatically stop at the next floor, open the door and release people, (non-power supply and safety circuit failure) and then terminate the service
Fault information recording	Each elevator can record 100 failure times and failure time
Automatic car position correction	If the elevator runs for a long time, the elevator position may be deviated, and the system can correct the elevator position
Anti-disturbance function	
Do not exceed the maximum incoming call	For example, the maximum weight of the car can carry 15 people, and it is impossible to trigger more than 15 car calls in the car
Cancel the remaining incoming call when the load is empty	If the car is empty and there is nobody inside, the remaining internal calls of the car cannot be more than 3, otherwise it will be automatically cancelled
Last stop cancels incoming call	When the elevator runs to the upper and lower terminals, all in-car call commands are cancelled
The reverse intra-call is automatically cancelled	When the direction of the elevator has been selected, all in-car call designations in the opposite direction are automatically eliminated
Cancel the call when the car is not in use	After the set number of runs is reached, all in-car calls will be cleared if the safety light curtain is not interrupted

Select function Table 1

Function	Function description
Car function	
Car operation panel with LED display	An LED display is used inside the car
Independent advertising display	True color information display
bypass operation	In the case of the driver, press the direct drive switch, the elevator runs directly to the designated floor in the car, and does not respond to the external call
SUB-COP	Up to two sub car operating panels can be connected
HOB	The elevator car can be equipped with a disabled control panel, and its main feature is that all the buttons are distributed in the elevation range of 900-1200mm
Ultraviolet disinfection lamp	Uv disinfection lamp can be installed in the car lintel (usually used in hospitals)
Audio announcement and background music	Voice information (such as floor name, door opening, welcome message, etc.) can be automatically broadcast in the car with a variety of voices, and the background music can be played independently. Full hi-fi replay sound quality
camera	Real-time monitoring of conditions inside the car
Driver operation	Through the switch in the control box to enter the driver's operation state, the driver can manage the number of passengers in the car, the corresponding call outside the hall, opening and closing the door
Lift lock	When the elevator lock signal is effective, after the elevator service is completed, it runs to the base station to open the door and release people, and the door is closed to enter the body machine state
The card reader controls calls inside the car	In-car calls work only through IC card operation
Key switch controls in-car call change	In-car calls work only through key switch operation
Independent operation	When the signal is valid, the lift is detached from the group control and operates independently
Car door function	
pre-opening	
resurfacing	When the car door is open, if the car is not in the best position, the elevator will re-level the door function
Gate function	
Landing gate arrival bell	Arrival bells can be installed at each landing
VIP outbound call	When the lobby VIP function is activated, the elevator will ignore all calls and immediately arrive at the called landing
Card reader control level door call	Hall door calls work only with an IC card
Corresponding stop lock off	By operating the key switch or IC card or controller, a predetermined landing can be locked
Termination of service display	When the elevator terminates service, the display panel of the hall door and the car door displays the termination state

Select function Table 2

Function	Function description
Group control function	
Group control function	Group control of up to 8 elevators, each up to 55 floors
Optimal call distribution	Call allocation is optimized every 200 milliseconds to handle changes within the group control
During group control, the faulty elevator automatically exits group control	In group control, if one or more elevators fail, the other elevators continue to operate in group empty mode
Peak operation	When going up peak: All elevators stop at the main landing station. In a group of elevators, only one elevator should make up and down calls, and the other elevators only respond to up calls. During the next peak: all elevator stops back to the main floor are cancelled. In a group of elevators, only one elevator makes corresponding up and down calls, and the other elevators only make corresponding down calls
Cancel group control	Group control can be enabled by manipulating timers, key switches, or parameter Settings
Dispersed waiting lift	In the group control system, when the elevators are on the same floor, the parallel or group control system starts to disperse and wait for the elevator to run to the idle landing
Firefighter emergency operation	When the fireman switch is effective, all internal and external calls will be cancelled, trigger the display and fire buzzer in the car, and make the safety light curtain of the elevator door fail, the elevator is closed and runs until the pre-set fire evacuation level, when the elevator reaches the fire evacuation level, the elevator door will be opened all the time, and the fire buzzer will be cut off. At this time, firefighters can enter the elevator and close the door through the floor button or the door button. If the door is fully closed, release the button and the elevator door will automatically open. When you reach the landing required by firefighters, the elevator door will not open automatically, only the door button can open the door. But if you release the button before the door is fully open it will automatically close. When the elevator returns to the fire evacuation floor and the fireman switch is restored to the normal level, the fire protection function ends.
Power failure automatic evacuation	
Generator power supply signal interface	Provide generator power supply signal interface, when the power supply is cut off, the generator power supply, each elevator in order to evacuate to the designated floor, when all elevators flat level release is completed, keep one or more elevators in normal operation
Earthquake emergency return	When the Seismic sensor detected when the earthquake occurred, the lift can stop nearby to evacuate, and then stop
Special control function	
Network monitoring	Through the network interface module, the elevator can be monitored online (such as remote monitoring through the Internet)
Information service	For example, the system provides intelligent building information and management services
Cell monitoring	Through the communication line, the system can be connected with the monitoring room of the community, showing the elevator floor location, running direction, fault and other information

Car Distribution Box (CDB)

Product Functions

- » Overhaul, overhaul up and down, overhaul slow running
- » Emergency stop, maintenance lighting control, alarm bell
- » With door machine interface, realize door machine control
- » With light curtain interface, realize light curtain control
- » With multi-function sensor interface, including a weighing signal, three level signals
- » With safety clamp, car door lock safety loop interface
- » With car lighting, car fan interface
- » With accompanying cable, car control panel and Debugger interface.
- » Car top intercom, arrival bell
- » Set junction box, inspection box, inspection lighting control, alarm bell intercom device equal to one
- » Key electronic components use the industry's excellent brand to ensure the safety and reliability of the system
- » Flexible configuration, strong adaptability and expansion ability to meet the needs of different customers
- » Portable maintenance box, convenient maintenance personnel in the top of the car in different directions for maintenance operations

Product characteristics

- » Supports a variety of door motor controllers, can control up to 3 door motor
- » Analog load cell with multiple output ranges (0V-10V)
- » With the door test function, it is convenient to debug the door engine on the top of the car
- » Three door area signals provide safe and reliable pre-opening and re-leveling functions
- » With the debugger interface, you can view and edit all parameters of the whole ladder at the top of the car, which is convenient for debugging
- » The in-line anti-insertion cable prevents errors during installation
- » Equipped with a public button to avoid misoperation and ensure safety

Technical Parameters

- » Power supply voltage: DC24v(electronic board), AC220V(socket power: safety circuit)
- » Power supply current: 500MA
- » Communication protocol: CANOpen
- » Communication rate: 125Kbps
- » Usage requirements: humidity 35-80%, temperature -10~+50°C
- » Storage requirements: humidity 35~80%, temperature -20 ~+80°C
- » Protection class: IP52
- » Dimensions: 463*159*516

Pit access box

Production Functions

- » Equipped with emergency stop button, can control the stop of the elevator
- » Standard well light switch
- » With tension wheel, lower limit, car buffer (optional), counterweight buffer (optional) interface

Product characteristics

- » Key components adopt the best brand in the industry to ensure the safety and reliability of the system
- » The in-line anti-insertion cable prevents errors during installation
- » The bottom pit has cable interface summary, the wiring is simple and clear, convenient maintenance

Technical Parameters

- » Power supply voltage: AC220V(socket power supply, safety circuit)
- » Usage requirements: Humidity 35-80%, temperature -10° C-+50° C
- » Storage requirements: humidity 35-80%, temperature -20·C-+80C
- » Protection class: IP52
- » Dimensions: 186*82*270



Car Distribution Box (CDB)



Pit access box

Elevator control system main board

Product Functions

- » Frequency conversion drive module, traction machine temperature, brake feedback information acquisition and control
- » Hall button display information control, floor door call information record and response
- » Display information control in the car, record and respond to operation information in the car
- » Car door drive control
- » Optical curtain signal acquisition and processing
- » Car lighting and car fan control
- » Elevator maintenance operation and emergency electric operation control
- » Record the accumulated time and number of running times
- » Record running fault information
- » Responsible for the operation and scheduling of the whole control system

Product characteristics

- » The elevator running curve is perfectly controlled, and the elevator riding comfort is good
- » Common port Optional configuration, increase the adaptability of external devices and facilitate expansion
- » Independent variable frequency driver module interface
- » When not called, turn off car lights and fans to save power
- » The temperature, lock action, safety loop and split-level feedback information processing ensure the safe operation of the elevator
- » 100 complete fault records to facilitate the troubleshooting of elevator operation faults and ensure the efficiency of elevator use
- » Simple cable interface

Technical Parameters

- » Supply voltage: DC24V, DC5V
- » Signal input: switch signal
- » Control output: relay contact
- » Analog input: 0V-10V
- » Communication mode: CAN, parallel digital information exchange interface
- » Product size: 102*264mm

Electric brake release device

Product Functions

- » The operation button can make the electric motor lock open and make the car slide to the level position
- » When the brake is loosened, the safety loop is automatically disconnected, and the original lock drive and operation contactor control loop are cut off to avoid failure
- » When the car is sliding to the level position, the output is prohibited, and the brake is reset
- » The AC input is used to charge the battery, the battery is converted to DC output during operation, and the lock coil is controlled

Product characteristics

- » Double button operation to avoid accidental triggering
- » Lock drive voltage can be customized according to user requirements
- » Automatically disconnect the safety loop to avoid failure
- » Detect the position of the car, and stop automatically when the car network moves to the level position
- » Built-in 12V battery, with or without power can be used

Technical Parameters

- » AC176V- AC264V Power supply voltage: AC176V-AC264V
- » Output power: 110V
- » Output current: 2.8A
- » Rated power: 300W
- » Battery voltage: DC12V
- » Product size: 63X153X242mm