

Integrated Control & Drive Solution

Fusion™

Introducing **FUSION™**, an integrated elevator control and drive solution that provides superior performance through S-curve technology, and significantly reduces resources required to install, set up, and manage elevator installations.

Fusion was developed by Zhongxiu Kinetek (ZKX), a leading Chinese control manufacturer, in collaboration with Motion Control Engineering (MCE), a US-based company with more than 25 years of elevator control design expertise.

Fusion's single unit solution maximizes efficiency and performance through the following:

- No additional wiring is required between the controller and drive.
- Controller and drive parameters are consolidated into a single menu, and easier to adjust using the onboard keypad and LED display.
- Intelligent pre-torquing energizes the motor to prevent roll back and ensure prompt take-offs, regardless of the load in the car.
- S-curve is calculated based on real time conditions.
Continuous error correction based on door zone positions.

Fusion is ideally suited for low to mid-rise applications with speeds to 4.0 m/s, and simplex/duplex/groups to eight cars.



Applications

- Machine-room and MRL
- Speeds to 4.0 m/s
- Synchronous or asynchronous motors

Features/Benefits

- Static motor auto-tune
- Rotating auto-tune
- Intelligent pre-torque without load weigher
- On-board adjustment and diagnostics
- Wide range of protective parameters
- Emergency power supply ready
- Regenerative drive ready
- High visibility LED display and keypad
- Digital signal processing
- Automatic output voltage regulation
- CE certified
- Low motor noise with high carrier frequency

Zhongxiu Kinetek Elevator Technology Co., Ltd. (ZKX)

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Specifications

FEATURE	SPECIFICATION	DESCRIPTION
Power supply	Three-phase, AC	380V ± 15%
	Frequency	50 - 60 Hz ± 5%
	Power factor Cos	> 0.92
	Power range	7.5 - 37 kW
Output	Voltage range	0 - rated input voltage
	Frequency range	0 - 400 Hz
Control	Method	16 bit DSP, 32 bit ARM
	Type	SPWM current vector control
	Mode	Sensorless vector control (SVC)
		Vector control with PG (VC)
		V/F control
	Carrier frequency	1.0k - 16kHz
	Frequency range	0 - 400Hz
	Speed accuracy	± 0.5% of maximum speed, SVC ± 0.02% of maximum speed, VC
	Starting torque	150% Mn @ 0.5Hz, SVC
		180% Mn at 0 Hz, VC
Overload capacity	150% rated current for 60 s	
	180% rated current for 10 s	
Efficiency	> 98% nominal	
Environmental	Operating temperatures	- 10° to 40° C
	Humidity	< 95% non-condensing
	Altitude	Derate above 1000m

Fusion™ is an innovative global solution that integrates elevator control and drive technology in a single unit.

Fusion is the visionary solution designed and engineered by Zhongxiu Kinetek (ZXX) and Motion Control Engineering (MCE) — Kinetek operating companies focused on providing high quality, next generation elevator control and drive technology to the global marketplace.



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Elevator Control Board

ZXK-CAN3200C

Parameters

Input/output signals

Item	Input signal	Output signal
Construction	DC 24V anode, valid for low voltage input	Open contact output of relay
Specification	10 multi-functional inputs, 2 compound inputs of pulse switches	3 multi-functional outputs
Quantity	34	18

Power supply

Item	Power 1	Power 2	Power	Output voltage
Specification	DC 5V, 600mA	DC 24V, 200mA	Power 1 ≤ 3W Power 2 ≤ 5W	DC 24V, output power ≤ 1A

Communication terminal

Item	CAN BUS1	CAN BUS2	CAN BUS3	CAN BUS4	485	RS232
Function	Absolute value encoder	Hall call communication	Car communication	Duplex/group control	Monitor	Communication

Special terminal

Item	High speed counter input 1	High speed counter input 2
Function	Open-circuit signals of collector used for generating output and differential signals	Open-circuit signals of collector used for push pull output signals

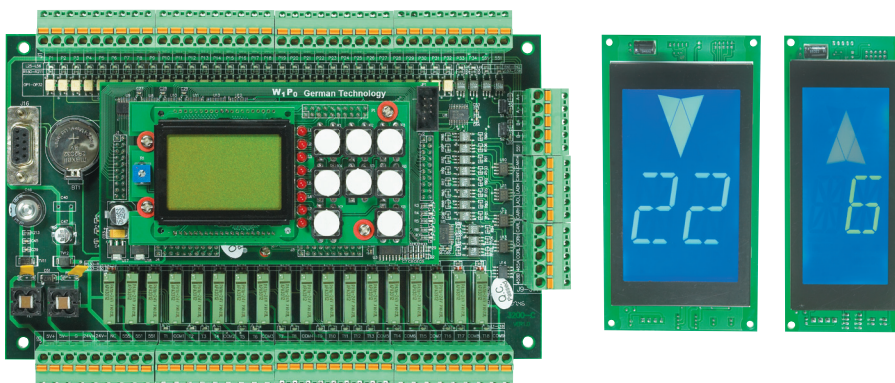
System configuration

Type	ZXK-CAN3200C	ZXK-CAN01C	ZXK-CAN02C	ZXK-CAN03C
Definition	Controller for passenger elevator	Car control board	Car instruction board	Hall call board
Quantity	1	1	One for every 8 landings	One in car and one per landing

Features

- Philips 32-digit capability Philips ARM chip, fault tolerance and monitoring to improve reliability of the system
- Two independent CAN communication circuits used in car and shaft separately, highly improved performance in real-time and reliability
- Multiple communication interfaces: 4 CAN, 1 RS232 and 1 RS485
- Duplicate high speed count inputs used for speed monitoring of high-speed elevators
- LCD display and multi-language menu, high safety and reliability with help of classified code protection
- Real-time clock and fault diagnosis function, 100 fault recordable (type, time and position, etc.)
- DCP function, direct landing, door pre-open, creeping leveling available
- Suitable for elevators up to 64 floors and speeds up to 6 m/s, collective selective control, duplex and group control up to 8 cars (without group controller)

ZXK-CAN3200C 32-bit microprocessor-based serial communication controller



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Elevator Control Board

ZXX-CAN3000B



Parameters

Input/output signals

Item	Switch signal input	Output signal
Specification	DC24V anode, valid for low voltage input	Open contact output of relay, output current up to 3A
Quantity	23	10

Power supply

Item	Input	Power	Output
Specification	DC 24V 1A, DC 5V 2A	DC 5V ≤ 5W DC 24V ≤ 3W	DC 24V, power ≤ 1A

Special terminal

Item	CAN BUS1	CAN BUS2	High-speed pulse input
Function	Communication	Duplex	Open-circuit signals of collector used for push-pull output signals, difference signals
Quantity	1	1	1

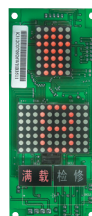
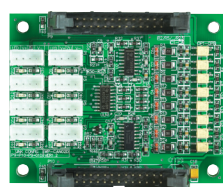
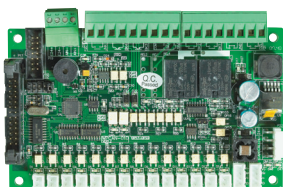
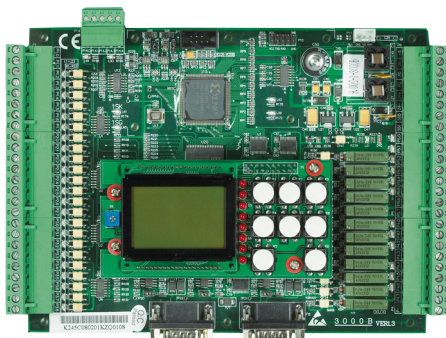
System configuration

Type	ZXX-CAN3000B	ZXX-CAN01D	ZXX-CAN02D	ZXX-CAN03C/D
Definition	Controller for passenger elevator	Car control board	Car instruction board	Hall call board
Quantity	1	1	One for every 8 landings	One in car and one per landing

Features

- Philips CPU, 512K Flash ROM, program easily upgradable
- CAN BUS LAN serial communication technique at speeds of up to 125 k/s, rapid feedback
- LCD display, high safety and reliability with help of classified code protection
- Clock and fault diagnosis function, automatically recording fault information (type, time and position)
- Serial communication and modular structure applied, an instruction board for processing car signals and controlling the door machine directly
- Remote monitoring function, duplex is available
- Integration of hall call instruction and hall indication. Dot matrix and rolling display for direction and speed.
- Suitable for elevators up to 32 floors, full collective, duplex

ZXX-CAN3000B Controller



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Elevator Control Cabinets

ZXK-6000-VVVF



ZXK-6000-VVVF Control Cabinet

Model	ZXK-6000-VVVF
Application	Up to 48 landings, speed up to 4 m/s
Driving mode	VF control, integrated drive and control units, DSP high speed processing system
Leveling accuracy	$\leq \pm 5\text{mm}$
Landing mode	Direct landing
Display	Dot-matrix rolling indication, 90 characters available
Communication	CAN for car and hall separately
Control mode	Simplex, duplex or group control (without group control cabinet)
Optional functions	Double door machine control, automatic re-leveling, remote monitoring, etc.

Features/Benefits

- Static motor auto-tune
- Rotating auto-tune
- Intelligent pre-torque without load weigher
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- Emergency power supply ready
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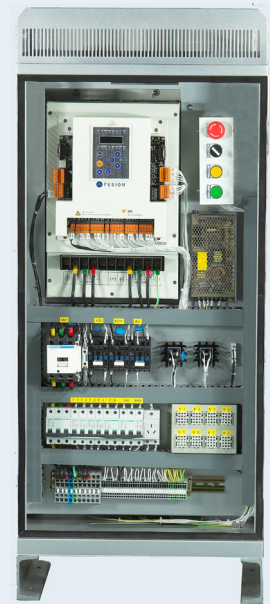
Enclosure Size:

Machine Room: 1300mm*540mm*380mm (L*W*H)

Machine Room Less: 2000mm*400mm*270mm (L*W*H)

Enclosure size may change per specific application.

ZXK-6000-VVVF Control Cabinet



ZXK-6000 VVVF Machine Roomless Control Cabinet



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