



User Guide

NICE9000-V Series

Integrated Villa Elevator Control Cabinet



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Preface

Thank you for purchasing NICE9000-V Integrated Villa Elevator Control Cabinet. This product is an integrated control cabinet with innovative, modular and super-compact design by Inovance. Monarch™ is a brand name for elevator- and escalator-related products exclusively owned by Inovance.

Features

Delicate and compact design

- Integrated construction with super-compact design. 30% of size compared to a conventional control cabinet
- Delicately shaped for flexible installation, fit perfectly with style of decoration

Quiet running

- Free of contactors and fans. Reduced noise level (< 40 dB), suitable for life

Comfortable riding

- High performance driving platform, innovative algorithms optimizing riding comfort at startup and running of the elevator

Reliable safety

- "5S" design: Small, Silence, Save, Safe, Smart.
- Combined multiple safety features: smart auto-rescue, auto-rescue at power-off, one-key rescue etc.

Related manuals (currently only available in Chinese language)

Below is a list of manuals related to this product. Refer to these manuals if needed.

Doc. No.	Document Title
19010536	NICE9000-V Integrated Villa Elevator Control Cabinet Advanced User Guide
19010363	2G Smart Hardware Product User Manual

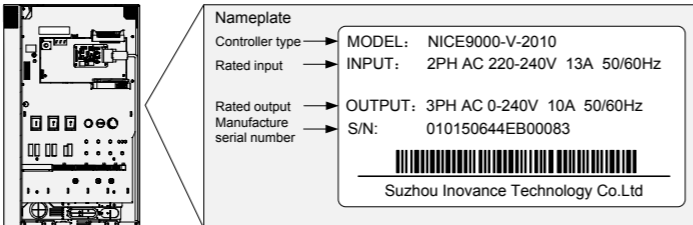
The manuals are subject to change without notice. The up-to-date version of the manual is available via contacting our distributors, scanning the QR code on the cover page of the manual, or downloading from our official website: www.inovance.cn.

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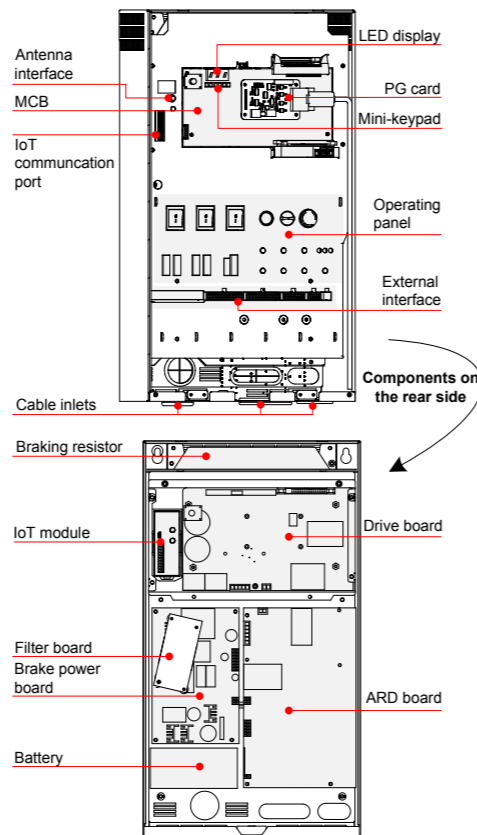
1. Product Information

Product Type and Nameplate

NICE 9000 - V - 2 010			
Mark	Product series	Mark	Rated current
NICE 9000	NICE9000 series	010	10A
Mark	Controller type	Mark	Voltage
V	For villa elevators	2	Single phase 220V



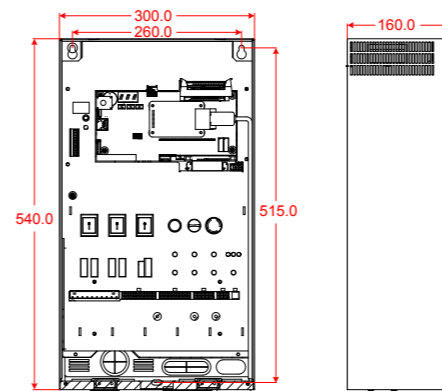
Component Description



Description	Function
Main control board (MCB)	Core control unit of the integrated control cabinet
Drive board	Core drive unit of the integrated control cabinet
Interface board	Operating interface and interface for connecting external devices
Mini-keypad	Operating panel for quick setup of the integrated control cabinet
7-segment LED display	Message display window for the integrated control cabinet
Antenna interface	Interface for IoT antennas
Braking resistor	Releasing excessive energy during the braking process
IOT module	Monitoring and auto-dialing
Filter board	Suppressing high harmonics
Brake power board	Supplying power needed for safety circuit, 24 V system, and the brake
ARD board	For emergency evacuation
Lithium battery	Battery for emergency evacuation
PG card	MCTC-PG-E card included in default product offering which adapts to a SIN/COS encoder

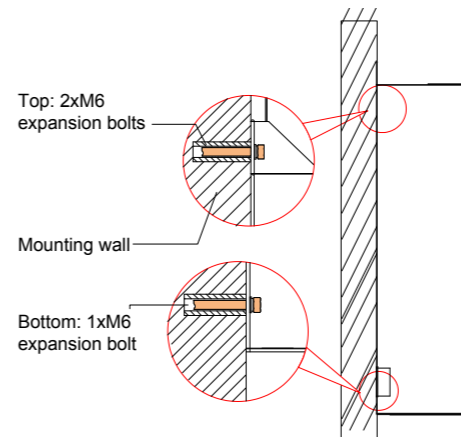
2. Installation

Mounting Dimensions



Installation Instructions

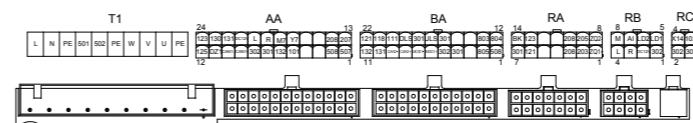
This product can be installed using backplate and through-hole mounting. This manual describes backplate mounting only. Use three M6 expansion bolts to fix the control cabinet on the wall.



3. Wiring

Interface to external devices

This product provides a consolidated connector interface. You can connect with ease using a minimum number of cables. For peripheral device cables outside the control cabinet, you can either choose our offered service package, or fabricate the cables according to the wiring diagram provided by us.



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Connector No. and Signal No.	Function	
T1 connector L N PE 501 502 PE W V U PE	L	System power input - L
	N	System power input - N
	PE	Grounding
	501	Lighting power input - L
	502	Lighting power input - N
	PE	Grounding
	W	Motor W-phase
	V	Motor V-phase
	U	Motor U-phase
	PE	Grounding
AA connector 24 123 130 131 DC12V L R M7 Y7 208 207 125 DZ1 CAN1- CAN1+ 302 301 132 101 508 507 12 1	507	Car lighting power supply - L
	508	Car lighting power supply - N
	101	Safety circuit start branch (reserved)
	132	Hall door lock circuit end
	301	Power supply DC 24 V +
	302	Power supply DC 24 V -
	CAN1+	CAN communication signal
	CAN1-	CAN communication signal
	DZ1	Door zone signal
	125	Emergency drive signal
	207	Door operator power supply - L
	208	Door operator power supply - N
	Y7	Reserved
	M7	Reserved
	R	Intercom signal positive
L	Intercom signal negative	
BA connector 22 121 118 111 DLS 301 ULS 301 803 804 132 131 CAN2- CAN2+ MOD1- MOD1+ 302 301 805 508 11 1	DC12V	Intercom power supply DC 12 V
	131	Car door lock circuit end
	130	Car door lock circuit start
	123	Car top safety circuit start
	508	Shaft lighting - N
	805	Shaft lighting - L
	301	Power supply DC 24 V+
	302	Power supply DC 24 V-
	MOD1+	485 communication signal
	MOD1-	485 communication signal
	CAN2+	CAN communication signal/reserved
	CAN2-	CAN communication signal/reserved
	131	Hall door lock circuit start
	132	Hall door lock circuit end
	804	Shaft lighting -L
803	Shaft lighting -L	
301	Power supply DC 24 V+	
ULS	Up emergency terminal slow-down signal	
301	Power supply DC24 V+	
DLS	Down emergency terminal slow-down signal	
111	Shaft safety circuit start	
118	Emergency drive pit short-circuit point	
121	Shaft safety circuit end	

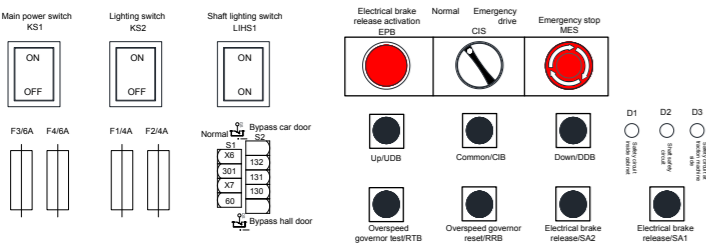
Connector No. and Signal No.	Function
	ZQ1+ Brake power supply positive
	203 Overspeed governor test power supply -L
	208 Overspeed governor test power supply -N
	121 Overspeed governor switch start
	301 Power supply DC 24 V +
	ZQ2- Brake power supply negative
	205 Overspeed governor reset power supply -L
	208 Overspeed governor reset power supply -N
	123 Overspeed governor switch end
	BK Brake travel switch detection input
	302 Power supply DC 24 V -
	DC12V Intercom power supply DC 12 V
	R Intercom signal positive
	L Intercom signal negative
	LD1 Firefighting output
	LD2 Firefighting output
	AI Analog load weighing
M Analog load weighing	
	301 Power supply DC 24 V +
	302 Power supply DC 24 V -
	X14 Reserved
	102 Safety circuit 0 V

Wiring diagram

Refer to the drawings delivered with the product.

4. Using the Operating Panel

Operating panel elements



Mark	Description	Operation
KS1	Main power switch	System power is on when the switch is pushed to ON. System power is off when it is pushed to OFF.
KS2	Lighting switch	Lighting power is on when the switch is pushed to ON. Lighting power is off when it is pushed to OFF.
LIHS1	Shaft lighting switch	This switch is a double-control switch which is two-way conductible.
F1	Door operator power fuse	/
F2	Door operator power fuse	/
F3	Lighting power fuse	/
F4	Lighting power fuse	/
S1	Normal state connector	System is in normal operation when the short-circuit plug is plugged into S1.
S2	Bypass connector	Car door lock is bypassed when the short-circuit plug is plugged into S2 pins 1-4; Hall door lock is bypassed when the short-circuit plug is plugged into S2 pins 2-5.
EPB	Electrical brake release activation button	Push the button and hold for 3 seconds, ARD board power chip will be activated.
CIS	Emergency drive switch	/
MES	Emergency stop switch	/

Mark	Description	Operation
UDB	Up drive button	Under emergency drive state, push UDB and CIB simultaneously, the system runs emergency drive in up direction; Push DDB and CIB simultaneously, the system runs emergency drive in down direction.
CIB	Common button	
DDB	Down drive button	
RTB	Overspeed governor test button	In emergency drive state: 1) Set F-8 =12 or F3-24=3 on the mini-keypad to enter overspeed governor test mode.
RRB	Overspeed governor reset button	2) Set F-8 =13 or F3-24=4 on the mini-keypad to enter overspeed governor reset mode. 3) Push RTB and RRB buttons simultaneously and hold for 3 seconds, system outputs Y4/Y5 (Y4 in test mode, Y5 in reset mode) 4) Only AC220V overspeed governors are supported.
SA1	Electrical brake release button 1	Push SA1 and SA3 simultaneously and hold for 2 seconds, electrical brake release function will be activated. The brake is released and the elevator rolls back automatically.
SA2	Electrical brake release button 2	
D1	Indicator for safety circuit inside the cabinet	When safety circuit inside the cabinet is activated, D1 indicator is on.
D2	Indicator for shaft safety circuit	When shaft safety circuit is activated, D2 indicator is on.
D3	Indicator for safety circuit on traction machine side	When safety circuit on traction machine side is activated, D3 indicator is on.

I/O terminals

Mark	Parameter	Function
X1	F5-01	Door zone
X2	F5-02	STO detection
X3	F5-03	Brake relay detection
X4	F5-04	Brake relay detection
X5	F5-05	Motor stator shorting detection
X6	F5-06	Bypass
X7	F5-07	Emergency drive
X8	F5-08	Emergency drive up
X9	F5-09	Emergency drive down
X10	F5-10	Up emergency terminal slow-down
X11	F5-11	Down emergency terminal slow-down
X12	F5-12	Brake travel switch feedback
X13	F5-13	Motor stator shorting detection
X14	F5-14	Backup
Y1	F5-26	Running output
Y2	F5-27	Brake output
Y3	F5-28	Door lock shorting output
Y4	F5-29	Overspeed governor test
Y5	F5-30	Overspeed governor reset
Y6	F5-31	Firefighting output
Y7	F5-32	Backup

Typical operation scenario

1. Using overspeed governor test function

Overspeed governor test function can only be used under emergency drive state.

- 1) Ensure that the emergency drive switch is in emergency drive position.
- 2) Set F-8 =12 or F3-24=3 on the mini-keypad to enter overspeed governor test mode.
- 3) Push RTB and RRB buttons simultaneously and hold for 3 seconds, overspeed governor test relay outputs Y4.

2. Using overspeed governor reset function

Overspeed governor reset function can only be used under emergency drive state.

- 1) Ensure that the emergency drive switch is in emergency drive position.
- 2) Set F-8 =13 or F3-24=4 on the mini-keypad to enter overspeed governor reset mode.
- 3) Push RTB and RRB buttons simultaneously and hold for 3 seconds, overspeed governor reset relay outputs Y5.



This function only works with AC220V overspeed governors. DC24V is not supported. This function only works with AC220V overspeed governors. DC24V is not supported.

3. Using bypass function

The integrated control cabinet offers door lock bypass function by default. This function is realized by using special plug-connector combinations on the interface board.

- S1 connector is in normal state.
- S2 connector is in bypass state. Short the two pins on S2 on the upper part to bypass the hall door lock. Short the two pins on the lower part to bypass the car door lock.

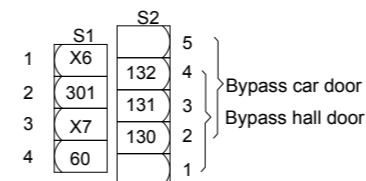
S1/S2 connectors are designed with poka-yoke method so that it is impossible to plug into both connectors at the same time. There are no other plug-connector combinations on the board that are identical with the combination for S2 bypass connector.

S1 contains two sets of short-circuit wires:

- 1, 2 are used for connect X6 signal on the main board;
- 3, 4 are used for connect X7 signal on the main board;

When both sets are connected, the control system is in normal running state. When S1 plug is removed, X6 (bypass signal) and X7 (emergency drive signal) are valid. When system enters bypass state, only emergency drive is possible.

S2 is used for manually bypassing hall door lock or car door lock: upper part for bypassing car door lock, lower part for bypassing hall door lock.



4. Using emergency evacuation functions

The integrated control cabinet offers ARD auto-drive evacuation, auto brake release evacuation, and manual electrical brake release functions by default.

- Auto-drive evacuation function

If the mains power supply is failed during running of the elevator, ARD function will be activated. Elevator is re-leveled, returns to door zone, and automatically opens the door to evacuate passengers. System is powered off in 10 seconds after the emergency evacuation process is completed.

- Auto brake release evacuation function

If a fault occurs during running of the elevator (except for safety circuit or door lock circuit faults) which causes the elevator unable to operate normally, auto brake release evacuation function will be activated. Elevator runs slowly in underloading direction to leveling. When it reaches the door zone, it automatically opens the door to evacuate passengers. System is powered off in 10 seconds after the emergency evacuation process is completed.

- Manual electrical brake release function

- 1) Under normal mains power supply, press the brake release buttons SA1 and SA2 simultaneously and hold for 2s. The system outputs electrical brake release circuit, traction machine brake is released. Elevator runs slowly in underloading direction. Release any of the brake release buttons during running, the output will stop (jogging brake release running).
- 2) If the power failure in the mains network lasts for more than 3min, ARD cuts off the battery power to save the battery. If you need to perform the electrical brake release, ARD system must be manually activated. Press the EPB activation button and hold for approximately 3s, the internal circuit will be activated and ARD system is energized. Press the brake release buttons SA1 and SA2 simultaneously and hold for 2s. The system outputs electrical brake release circuit, traction machine brake is released. Elevator runs slowly in underloading direction (jogging brake release running).



Electrical brake release feature must only be performed by qualified staff. Unauthorized personnel are prohibited to operate. After one brake release button SA1/SA2 is pressed, another button must be pressed within 1s. Otherwise, you must release the buttons and press them again.

INOVANCE Warranty Agreement

1. Inovance provides 18-month free warranty to the equipment itself from the date of manufacturing for the failure or damage under normal use conditions.
2. Within the warranty period, maintenance will be charged for the damages caused by the following reasons:
 - a. Improper use or repair/modification without prior permission
 - b. Fire, flood, abnormal voltage, other disasters and secondary disasters
 - c. Hardware damage caused by dropping or transportation after procurement
 - d. Improper operations
 - e. Damage out of the equipment (for example, external device factors)
3. The maintenance fee is charged according to the latest Maintenance Price List of Inovance.
4. If there is any problem during the service, contact Inovance's agent or Inovance directly.
5. Inovance reserves the rights for explanation of this agreement.

Suzhou Inovance Technology Co., Ltd.

Address: No.16, Youxiang Road, Yuexi Town, Wuzhong District, Suzhou 215104, P.R. China

Website: <http://www.inovance.com>