


PRODUCT CATALOGUE



Technology touches the world, discovery changes the future



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DISCOVERY

COMPANY PROFILE

INVT Discovery Technology(Wuxi)Co.,LTD is the invested holding company of Shenzhen INVT Electric Co., Ltd and always striving to be the international leading and respectable supplier for products and service on intelligent buildings. We have advanced research and development platform and improved production and quality control systems. Based on the leading variable frequency drive technology of INVT, the experienced elites in our company relies on efficient operating system, continuously innovates to provide comprehensive solution in the worldwide intelligent control .

Our company focuses on sophisticated and integrated intelligent control products. Following the business philosophy of "honest, truthful, assiduous and ambitious" and aimed at "serve our clients and exceed their expectation", we are always on the way of being a comprehensive service supplier of networking system and industrial automation/control system(Elevator intelligent control, intelligent control of environmental protection, energy control of central air conditioner, automatic control of building). We have introduced elevator, internet of things and building intelligence products, such as Elevator intelligent integrated machine, Special freight elevator integrated machine EC80, Ethernet network monitor DM-05 and so on.

Shenzhen INVT Electric Co., Ltd is a national high-tech enterprise listed on the Shenzhen Stock Exchange A share market in 2010(stock code: 002334). It not only has the unique Drive Engineering Research and Development Center in Shenzhen, but also has 9 holding companies and over 30 overseas and domestic offices and it's products have extended into over 60 countries.



COMPANY PHILOSOPHY

Vision: to be the international leading and respectable supplier for products and service on intelligent buildings!

Mission: Exploration and innovation makes safer, healthier and better life!

Business philosophy: Rallying joint efforts with our profound mindset", being "proficient with broad horizon"

Core value: Rallying joint efforts with our profound mindset, rigorous thought and creative spirit.

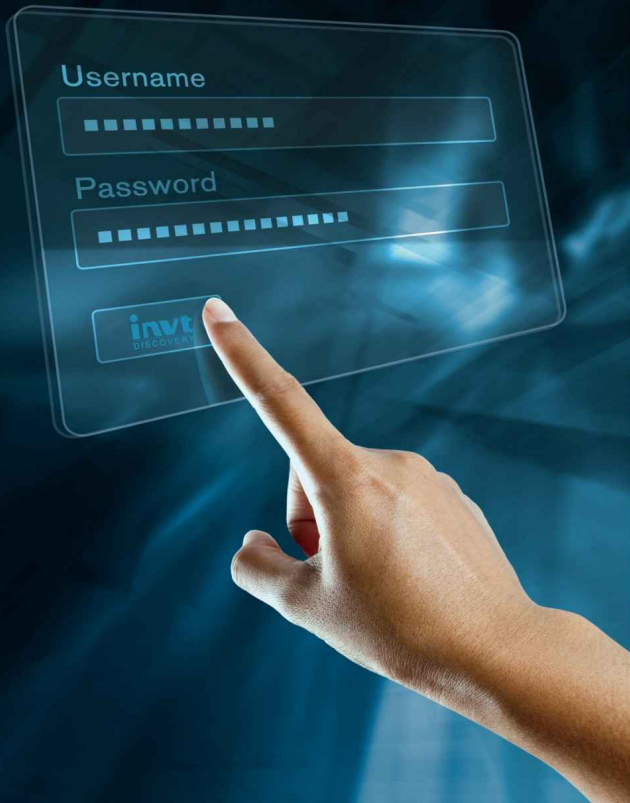
Service philosophy: Attentive services, professional

SERVICE NETWORK



HONORS





● Elevator intelligent integrated machine EC100

EC100 elevator intelligent integrated machine is an intelligent network product for control and drive through applying advanced variable-frequency vector control, intelligent elevator control and network communication. We strive to provide high-end, high-quality, energy-saving and safe control drive devices to the global market.

Basic performance:

- Resources reducing in the elevator installation, debugging, operation and management
- Max. speed: 6m/s Highest floor: 64
- Intelligent network group control can control 8 elevators at the same time
- Embedded high-performance starting compensation tech nology of non-weighting sensor
- Advanced space vector calculation and be compatible to the encoder interface of AM/SM master
- High-performance current vector control. 180% torque out put at zero speed
- Low voltage emergency-aid mode of AC220V single phase UPS, search the direction in light load

Special functions:

- The initiate open PLC programming controller: provide the shifting-changing function for some input/output terminals and further development platform for the user
- Manual controller: stand-alone human-machine interface, online Chinese/English help system; functions of debug ging management, debugging trace management, param eters uploading/downloading, computer data copying
- The manual controller can be connected to the CAN inter face in the car for convenient parameters setting
- Add TCP/IP internet module for remote debugging and control
- Support remote control of TCP/IP protocol and GSM/3G wireless control



● Comprehensive technical parameters of EC100:

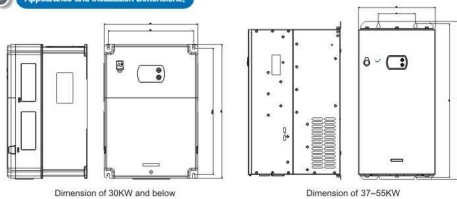
Item	Name	Description
Input/output characteristics	Input voltage range	380 ± 15%
	Input frequency range	47~63Hz
	Output voltage range	0-Flatied input voltage
	Output frequency range	0~400Hz
	Digital low voltage input	29 channels, DC 24V/4.5-8mA
Peripheral Interface Features	High-voltage detector input	3 channels, AC/DC 110V
	Digital output	12 channels
	CAN communication port	3 channels
	Encoder port	Embedded sin/cos, collector NPN output, push-pull output port of the encoder
Technical control characteristics	Control mode	PG vector control
	Overload capacity	150% of the rated current: 60s 180% of the rated current:10s
	Starting torque	PG vector control: 0Hz/180%
	Speed control accuracy	PG vector control: ± 0.1% of the Max. speed
	Carrier frequency	1.0kHz - 16.0kHz

● Elevator intelligent integrated machine EC100

② Power degree of EC100:

Model	Input voltage	Rated output power (KW)	Rated output current (A)	Braking unit	Minimum resistor	Braking resistor
EC100-1R5-S2	AC 220V ± 15%	1.5	5.5	Embedded	90 Ω	120 Ω/400W
EC100-2R2-S2		2.2	11	Embedded	50 Ω	100 Ω/1000W
EC100-004-4		4	11	Embedded	75 Ω	120 Ω/1200W
EC100-5R5-4		5.5	13	Embedded	55 Ω	80 Ω/1500W
EC100-7R5-4		7.5	18.5	Embedded	40 Ω	50 Ω/2000W
EC100-011-4		11.0	27.0	Embedded	28 Ω	40 Ω/4000W
EC100-015-4		15.0	34.0	Embedded	22 Ω	32 Ω/4500W
EC100-018-4		18.5	38.0	Embedded	20 Ω	28 Ω/5000W
EC100-022-4		22.0	46.0	Embedded	20 Ω	22 Ω/7000W
EC100-030-4		30.0	62.0	Embedded	20 Ω	20 Ω/10000W
EC100-037-4	3AC 380V ± 15%	37	75.0	Embedded	13 Ω	15 Ω/11000W
EC100-045-4		45	92.0	Embedded	9 Ω	10 Ω/14000W
EC100-055-4		55	115.0	Embedded	9 Ω	9 Ω/16000W

② Appearance and Installation Dimensions:



Dimension of 30KW and below

Dimension of 37-55KW

Power (KW)	W(mm)	H(mm)	D(mm)	A(mm)	B(mm)	C(mm)	Hole diameter	Installation stud
AC1.5-2.2	170	320	197	151	303	6.5	φ 6.5	M6
4-11	170	320	197	151	303	6.5	φ 6.5	M6
15-18	230	330	197	210	311	6.5	φ 6.5	M6
22-30	255	400	226	237	384	10	φ 6.5	M6
37-55	270	555	325	130	540	2	φ 7	M8

② Configuration instructions of EC100:

- Signal interface board EC100-I/O: EC100-I/O, standard-configured for EC100, is the interface board of the input/output elevator signal. DB62 core cable is also standard-configured (the Max. length: 10M).
- Manual controller EC100-PAD: EC100-PAD is optional for the elevator debugging.

● Special cargo elevator integrated machine EC80

EC80 Special cargo elevator integrated machine is a product dedicated to cargo elevator control and drive through serial communication and advanced variable frequency vector control, intelligent elevator control. We strive to provide better integrated control devices at lower price.



Basic performance:

- Intelligent integrated machine special for cargo elevators
- Max. speed: 1m/s Highest floor: 6
- Embedded high-performance starting compensation technology of non-weighting sensor
- Advanced space vector calculation and be compatible to the in coder inter face of AM/SM master
- High-performance current vector control. 180% torque out put at zero speed
- Low voltage emergency-aid mode of AC220V single-phase UPS, search the direction in light load

Special functions:

- The initiate open PLC programming controller, provide the shift ing/changing function for some input/output termi nals and further development platform for the user Manual controller: stand-alone human-machine inter face, on line
- Chinese-English help system, functions of debugging man agement, debugging trace management, paramet ers up loading/downloading, computer data copying
- The manual controller can be connected to the CAN in terface in the car for convenient parameters setting

② Power degree of EC80:

Model	Rated output power (KW)	Rated output current (A)	Braking unit	Braking resistor
EC80-004-4	4.0	11	Embedded	75 Ω/1200W
EC80-5R5-4	5.5	13	Embedded	55 Ω/1500W
EC80-7R5-4	7.5	18.5	Embedded	50 Ω/2000W
EC80-011-4	11.0	27.0	Embedded	40 Ω/4000W
EC80-015-4	15.0	34.0	Embedded	32 Ω/4500W
EC80-018-4	18.5	38.0	Embedded	28 Ω/5000W
EC80-022-4	22.0	46.0	Embedded	22 Ω/7000W
EC80-030-4	30.0	62.0	Embedded	20 Ω/10000W
EC80-037-4	37.0	75.0	DBU100H-060-4	14 Ω/11100W
EC80-045-4	45.0	92.0	DBU100H-110-4	11 Ω/13500W
EC80-055-4	55.0	115.0	DBU100H-110-4	9 Ω/16500W



● Inverters special for elevators CHV180

Product overview:

The comfortability, safety and reliability of elevators have been improved through applying the internal advanced vector control with sensor and high accuracy intelligent control. The product is mainly used in passenger elevators and automated warehouses, etc.

Technical Features:

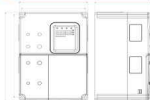
- Compatible with synchronous and asynchronous motor
- Starting torque compensation of weighing sensor; easy parameter setting can prevent starting sliding
- Starting torque compensation control of non-weighting sensor; control synchronous gearless tractor elevator and start steadily
- Synchronization and accurate initial angle identification, for SM, autotuning and debugging simplifying are available in the state, especially for the debugging during the connection between motor and machine
- Optimized speed loop; the speed loop applies variable ratio and Integral gain control, provides high dynamic response for starting and stopping and improve the comfort when constant running
- Forced deceleration process; prevent shock in up/down running
- Emergency-running; stop at the nearest leveling



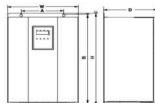
● Selection guideline:

Model	Input voltage	Rated output power (KW)	Rated output current (A)	Braking unit	Braking resistor
CHV180-2R2G-S2	AC 220V±15%	2.2	9	Embedded	120 Ω/400W
CHV180-004G-4		4	9.0	Embedded	120 Ω/1200W
CHV180-5R5G-4	3AC 380V±15%	5.5	13.0	Embedded	80 Ω/1500W
CHV180-7R5G-4		7.5	17.0	Embedded	50 Ω/2000W
CHV180-011G-4		11.0	25.0	Embedded	40 Ω/4000W
CHV180-015G-4		15.0	32.0	Embedded	32 Ω/4500W
CHV180-018G-4		18.5	37.0	External	28 Ω/5000W
CHV180-022G-4		22.0	45.0	External	22 Ω/7000W
CHV180-030G-4		30.0	60.0	External	20 Ω/10000W
CHV180-037G-4		37.0	75.0	External	14 Ω/12000W
CHV180-045G-4		45.0	90.0	External	11 Ω/13500W
CHV180-055G-4		55.0	110.0	External	9 Ω/16500W

● Appearance and Installation Dimensions:



Dimension of 15KW and below



Dimension of 18.5-55KW

Power (KW)	Installation Dimension		Appearance Dimension			Hole diameter (mm)
	A(mm)	B(mm)	H(mm)	W(mm)	D(mm)	
SC1.5-2.2	110.4	170.2	180	120	140	5
4.0-5.5	147.5	237.5	250	160	175	5
7.5-15	206	305.5	320	220	180	6
18.5-30	178	454.5	467	290	215	6.5
37-55	230	564.5	577	375	270	7

● EC100 Elevator control cabinet DSC-EC100-VVVF

Application scope:

- Apply EC100 Elevator intelligent integrated machine
- The Max speed:4m/s The Highest floor: 54
- Single elevator, parallel connection and group control
- CAN bus communication
- Levelling accuracy: 2mm
- Main board control and main controller in the car
- Safety standard: EN81 and Gb7588



● Power degree:

Model	Input voltage	Rated output power (KW)	Rated output current (A)	Dimension (mm)
DSC-EC100-VVVF-1R	AC 220V±15%	1.5	5.5	1200*600*330
DSC-EC100-VVVF-2R2		2.2	11	1200*600*330
DSC-EC100-VVVF-004		4	10	1200*600*330
DSC-EC100-VVVF-5R5		5.5	14	1200*600*330
DSC-EC100-VVVF-7R5	3AC 380V ± 15%	7.5	18	1200*600*330
DSC-EC100-VVVF-011		11	27	1200*600*330
DSC-EC100-VVVF-015		15	34	1200*600*330
DSC-EC100-VVVF-018		18	38	1200*600*330
DSC-EC100-VVVF-022		22	46	1200*600*330
DSC-EC100-VVVF-030		30	62	1200*600*330

● DC30 Elevator control cabinet DSC-DC30-VVVF

Application scope:

- Apply DC30 elevator controller
- The Max speed:4m/s The Highest floor: 64
- Single elevator, parallel connection and group control
- CAN bus communication
- Levelling accuracy: 2mm
- Main board control and main controller in the car
- Inverter: INVT CHV180 or others
- Safety standard: EN81 and Gb7588



● Power degree:

Model	Input voltage	Rated output power (KW)	Rated output current (A)	Dimension (mm)
DSC-DC30-VVVF-2R2	SC 220V ± 15%	2.2	9	1200*600*330
DSC-DC30-VVVF-004		4	9	1200*600*330
DSC-DC30-VVVF-5R5	3AC 380V ± 15%	5.5	13	1200*600*330
DSC-DC30-VVVF-7R5		7.5	17	1200*600*330
DSC-DC30-VVVF-011		11	25	1200*600*330
DSC-DC30-VVVF-015		15	32	1200*600*330
DSC-DC30-VVVF-018		18	37	1200*600*330
DSC-DC30-VVVF-022		22	45	1200*600*330
DSC-DC30-VVVF-030	30	60	1200*600*330	

● Elevator controller DC30

Product Features:

- The Max. speed:4m/s The Highest floor: 64
- Single door, dual door control
- Single elevator, parallel connection and group control
- Dual MCU structure, 32 bit Cortex-M3 chip
- CAN bus serial communication
- Multi-level DC/DC power conversion port
- RS232/USB port
- Modular Programming design



● Main controller in car DC-01

Product Features:

- 32-bit processor
- Simple and reliable CANBUS serial communication
- Internal 12-floor calling button, the outside calling signal can be extended to 64 floor
- Front-rear door control
- Energy-saving control for light and fan
- Arrival gang output
- Voice floor-reporting



● Command board in car DC-02

Product Features:

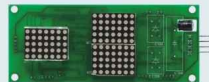
- Car button for the floor signal higher than 12 floor can be extended
- One for every 8-floor
- Four-wire DC24V



● Elevator calling and LCD DC-03A

Product Features:

- 32-bit processor
- Simple and reliable CANBUS serial communication
- All ASC characters can be displayed
- Calling, locking and fire protection function
- OL, FL, maintenance and UP/DOWN arrival lights are optional
- Lattice rolling display



● Elevator ultra-thin calling and LCD DC-03B

Product Features:

- Refinement ultra-thin design 10mm, applied to wall-hooked landing operation panel
- 32-bit processor
- Simple and reliable CANBUS serial communication
- All ASC characters can be displayed
- Calling, locking and fire protection function
- OL, FL, maintenance and UP/DOWN arrival lights are optional
- Lattice rolling display



● Segment code vertical LCD DC-07A

Product Features:

- DC24V power, 32-bit processor
- CANBUS serial communication, segment code display, vertical display, white characters on the blue background, generally applied in the hall
- Display floor, running direction, parking and full load
- Terminals of landing operation, lock and fireman
- Output of arrival lamp or gong



● Segment code horizontal LCD DC-07H

Product characteristics:

- DC24V power, 32-bit processor
- CANBUS communication, segment code display with white characters on the black background
- Floor, running direction, parking, overload generally showed in the car



● Elevator group controller GCL

Product Features:

- GCL group control system max 8 elevators
- GCL group control system operation mode: up passenger-flow rush hour ,down passenger-flow rush hour, normal, idle
- Optimized dispatch, optimized running elevator
- Shortest and longest Waiting time
- Calling control of long-time waiting
- Passenger-flow rush hour service, self-running
- Energy-saving and group control fire fighting operation
- Group control spare power operation
- Decentralized processing control



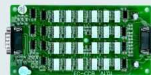
● Car top operation board EC-CCB

Product Features:

- One board every elevator at least, the first CCB supports 16 floors, one board every 20 floors when more than 16 floors
- Driver, independent, bypass or non-stop switch, driver commutating, door-opening delay button input etc.
- Combined with car top control board EC-CTB

Installation position

- Generally fixed in car operation panel or car top inspection station



● Car top control board EC-CTB

Product Features:

- CAN communication, RS485, RS232 communication available
- Analog weighing input and switching value weighing modes available
- Up to 64 floors control
- Arrival gong output, illumination energy-saving control, double-door control

Installation position:

- Generally fixed in car top inspection station or car operation panel



● Intelligent management of elevator IC card BS10

Product Features:

- Elevator special card can be used when get authorization of real estate management department.
- Re-swipe card prevention
- Real-time record of card
- Automatic calling according to IC card information
- Remote control of elevator button
- Setting elevator special IC card permission to meet different demands
- Blacklist lock-out function to prevent illegal use when card is lost
- Multi-function card like smart card
- Card controller functions: swiping, lost, timed, timing, charging, visitor, driver, fire fighting, real-time card records, remote real-time card information, remote control of elevator and so on.
- Elevator special IC card classification: authorization card, common card, report the loss of card, timed card, timing card, expense deduction card, visitor card

System configuration:

- BS10-01 controller 1 piece every elevator
- BS10-02 antenna board 1 piece every elevator
- BS10-03 extension board 1 piece every 16 floors
- BS10-04 write card (optional)
- IC card read-write software(optional)



● GSM wireless monitor module DM-03

Product characteristic:

To be connected with controller to realize elevator remote alarm (message) is elevator remote monitor.

- operation monitor
 - Elevator state: parking, maintenance, driver, automatic overload, full load, fireman's operation, leveling, brake, open and close door.
 - Landing operation panel register, inner instruction register: current operation direction, floor, safety circuit, door interlock circuit, limit and forced slowdown switch;
 - Failure checking and display, read and display all failures' records of EC100
- System service: inquiry and print elevator records, failure records and maintenance.
- Failure alarming, failure sent automatically to expected maintenance technician' mobile, up to 5 mobile number.



● Ethernet network monitor module DM-05

Product Introduction:

Network monitor module DM-05 is management and transmission module of elevator monitoring or maintenance. It may transfer spot RS485 or CAN protocol to standard TCP/IP protocol to realize remote accessing and control. Simultaneously it analyzes and saves collected signal, including maintenance records etc., to enhance the management of maintenance technicians. So the maintenance center may set up database of elevator operation.

Product characteristic:

- Real-time monitor system on the basis of network
- Dynamic real-time monitoring operation and early warning, saving in local SD memory and remote access server with black box function
- Real-time failure records and warning through collection of signal, analysis of failure and records of operation and failure
- Supervision and management of maintenance technician, real-time records of maintenance technician' work
- Extensible function for realizing wireless monitor through wireless monitor module
- ModBus protocol applied, RS485 compatible
- CAN port compatible, USB password-lock compatible



● Elevator data monitoring system DM10

System introduction :

Elevator monitoring system DM10 transfers signal to processor through optical isolator, which is collected by control node of spot control box. Signal is processed by non-normal data analysis through microprocessor and transferred to monitor center by network 485 to realize comprehensive management of real-time running monitor, failure warning, trapped and rescue, daily maintenance, quality evaluation, hidden trouble prevention and so on.

Function introduction:

- RS485 communication applied for centralized monitoring in the residential area
- Max transmission distance 1km, Applied for vertical elevator
- Real-time elevator operation display of floor, running direction and open and close door etc
- Elevator important signal monitor, such as safety circuit, door circuit, open and close door, limit switch, leveling switch
- Intelligent failure detection, analyze the operation state of elevator through the collection of control junction spot and switch state at site. It will be connected to the monitoring center and notice main fault information when elevator malfunction happens.
- Realizing remote accessing through adding network DM-05 in the monitor center

System configuration:

- Elevator data collector DM10(including peripheral sensor)
- Communication 485 and insulation device
1 set of Monitoring upper software
- Transfer Module DM-09 from RS232 to 485, one piece every 8 sets



● Elevator data, audio,video monitoring system DM20-B

Features:

- Elevator statistics management;
- Baud rate of data exchange: 10/100M;
- Real-time collection and dynamic display of elevator operation signal
- Automatic alarm and record of elevator malfunction
- Management of elevator statistics data
- Remote locking
- Remote control for floor selection

elevator audio transmission:

- Talkbacking between elevator cars
- Noise Ratio: $\geq 80\text{dB}$
- Distortion: $\leq 10\%$

Elevator video control:

- Resolution 420TVL
- Noise Ratio: $\geq 50\text{dB}$

video monitoring, history videos data reading

Hard disk video

● Multimedia Picture Machine Series LM20

- Display the floor, running direction, overload, fire alarm, full load, stopping and inspection information of the elevator;
- Floor reporting or background music playing. The displaying will stop automatically if no calling signal for 10 minutes.
- Display the date, time, LOGO of customers and words;
- Color pictures used for corporate identity and commercial advertising;
- The user can connect the U port with the computer to update the displayed images and audio files and change the displayed interfaces and modes. Horizontal and vertical installation is available.

the displayed interfaces and modes. Horizontal and vertical installation is available.

Model	LM20-056	LM20-070	LM20-084	LM20-104
Size of LCD	5.6 inch (4:3)	7 inch (16:9)	8.4 inch (4:3)	10.4 inch (4:3)
LCD Resolution(Pixels)	640×480	800×480	640×480	640×480



Note: the size is for horizontal installation. The length and width needs to be changed in vertical installation.

● Multimedia Video Series LM30

- Elevator information display: Display the floor, running direction, overload, fire alarm and inspection information of the elevator;
- Information display: display the picture, video, date, time and LOGO of the customer;
- Information publishing: change the information through network to provide for the people (for example, notice, announcement, news, weather, holiday greetings and slogans, but the real-time information needs communication network);
- Property value-added features: Color pictures or video can be used for corporate identity and commercial advertising;
- Display update function: The user can connect the U port with the computer to update the displayed images and audio files and change the displayed interfaces and modes.
- Interface diversity: various displaying interfaces for selection.

Model	LM30-084	LM30-104	LM30-121	LM30-150
Size of LCD	8.4 inch (4:3)	10.4 inch (4:3)	12.1 inch (4:3)	15 inch (4:3)
LCD Resolution(Pixels)	1024×768	1024×768	1024×768	1024×768



Note: No frame. Only for reference.

