

IVC Series Programmable Controller



Enterprise introduction

INVT (Shenzhen INVT Electric Co., Ltd.), a high-tech enterprise founded in 2002, is a key member of national torque plan. Since its foundation, INVT has been devoted to becoming the globally leading and respected provider of products and services in industrial automation and energy power fields, and providing the best products and services to allow customers more competitiveness.

Based on innovations and breakthroughs made in core areas like power electronics, auto control, IT, etc, INVT has evolved into an industry giant with business range covering industrial automation, network power, new energy vehicle and rail transit. INVT became the first A-share listed company (stock code: 002334) in Shenzhen Stock Exchange in 2010. At present, we have established 12 R&D centers (owning over 850 patents), 16 subsidiaries, over 30 domestic offices and warranty centers and 8 overseas branches, forming a sales network covering more than 60 countries and regions.

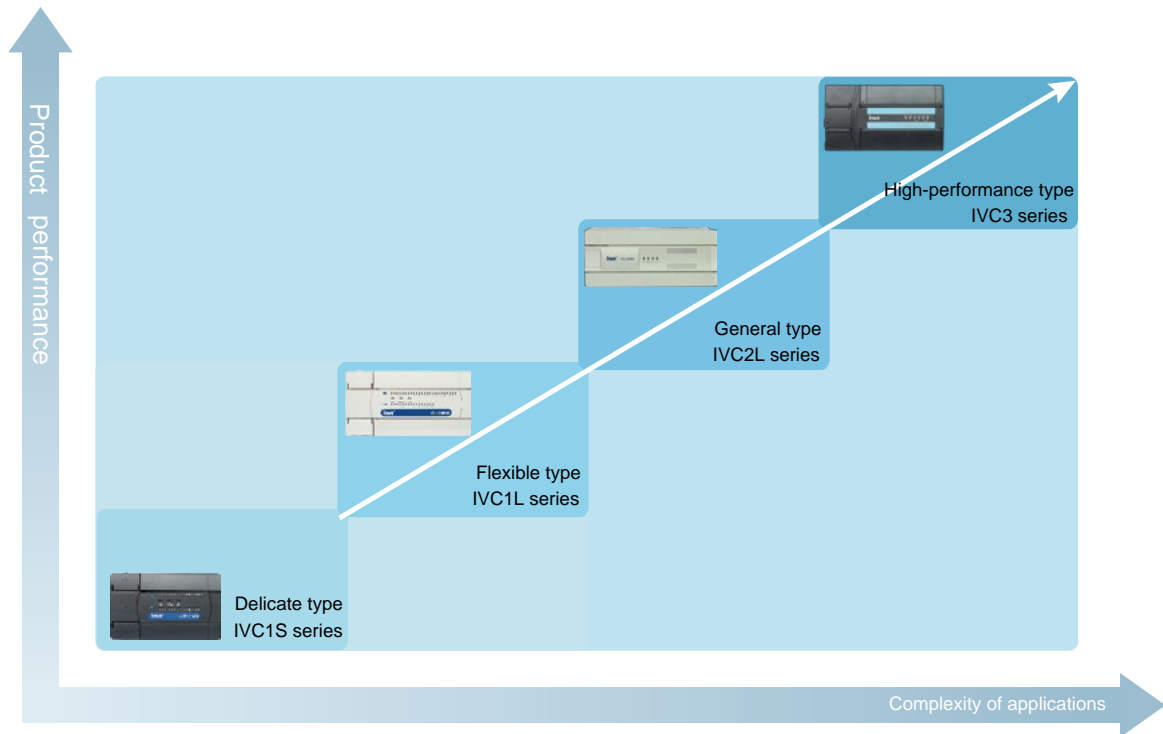


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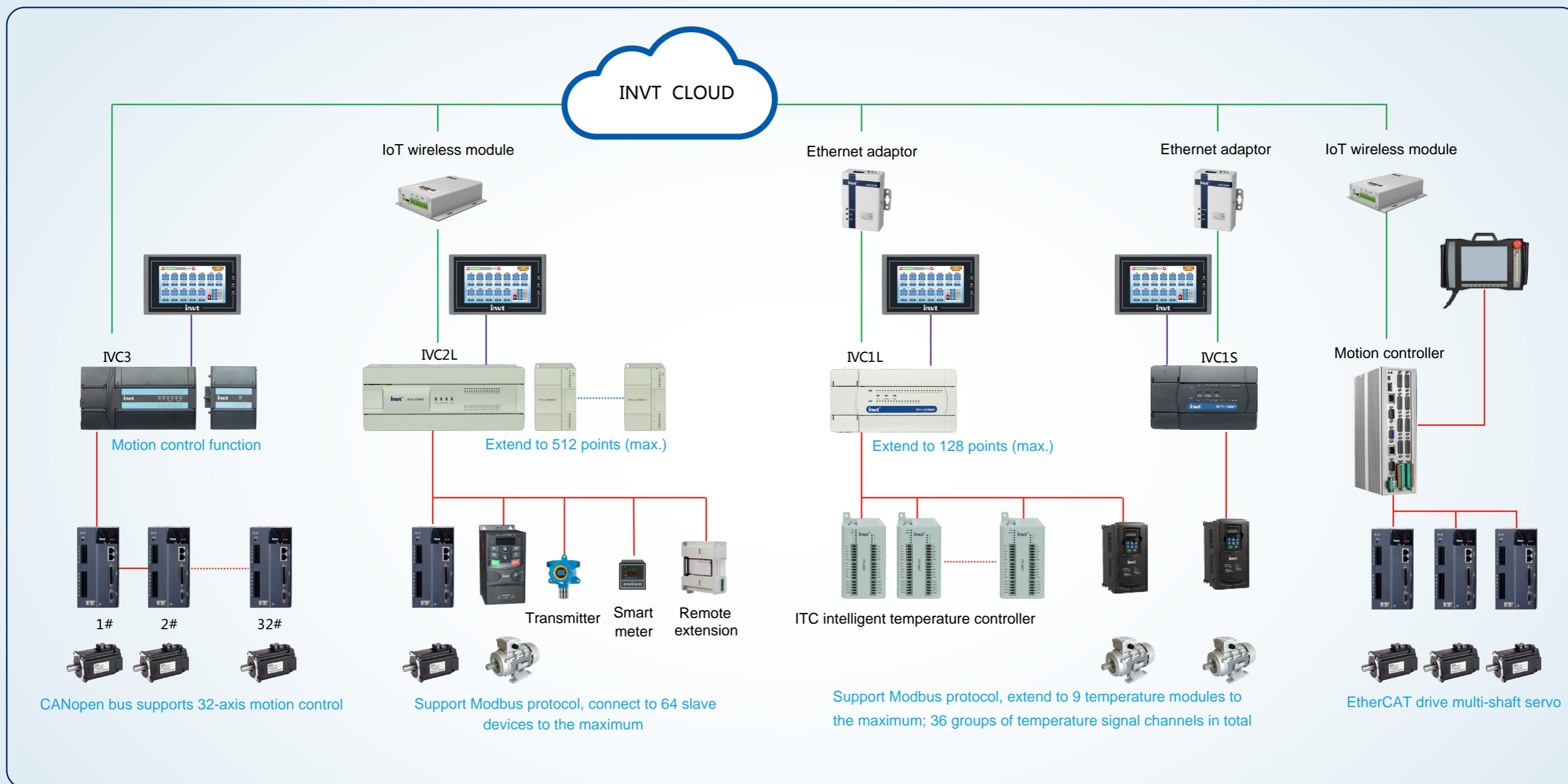
/ Overview of IVC series PLC product family



In order to satisfy customized needs of different industries, we provide customer with four kinds of IVC series PLC, which are delicate, flexible, general and high performance. The new design theory and abundant product portfolio of IVC series products contribute to the improvement on production efficiency, reduction of product cost and enhancing of product competitiveness.



INVT industrial automation system solution

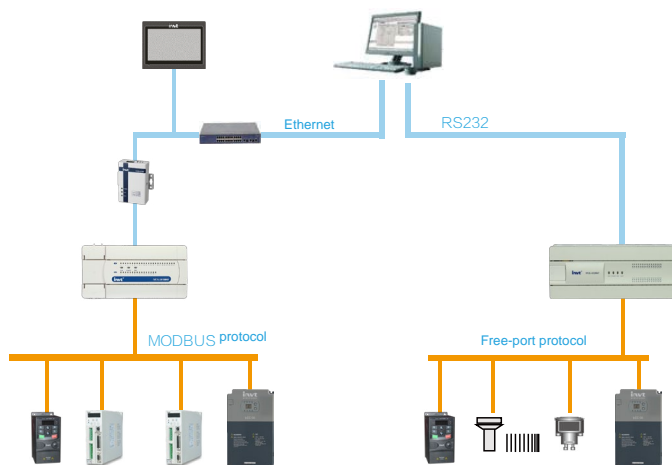


INVT strives to provide customers with comprehensive and integrated system solution in industry automation industry. Currently, our products cover the control layer, drive layer and field execution layer of industrial applications, including IoT cloud platform, HMI, PLC, motion controller, inverter, servo system, highly efficient motor, etc. We aim to help customers realize intelligent upgrade on traditional factories and products through offering extensive products and exceptional technical service.

Excellent communication performance

Multiple communication modes

Multiple communication ports and built-in communication protocols, including Modbus, free-port, N:N, programming port protocols, are provided, implementing the flexible device control networking.



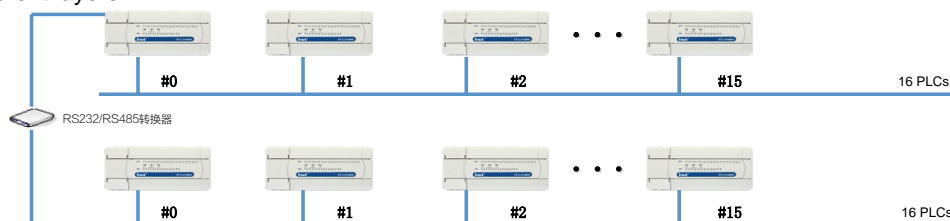
Special N:N networking mode

This mode implements the networking of multiple PLCs, and thus allows them to gain peer access to specific M and D component information. This mode is applicable to control the interlocking of correlated devices in the system. It adopts the N:N protocol and requires no extra programming.

Single-layer network structure: A maximum of 32 PLCs, with the fastest communication speed of 115.2 kbps



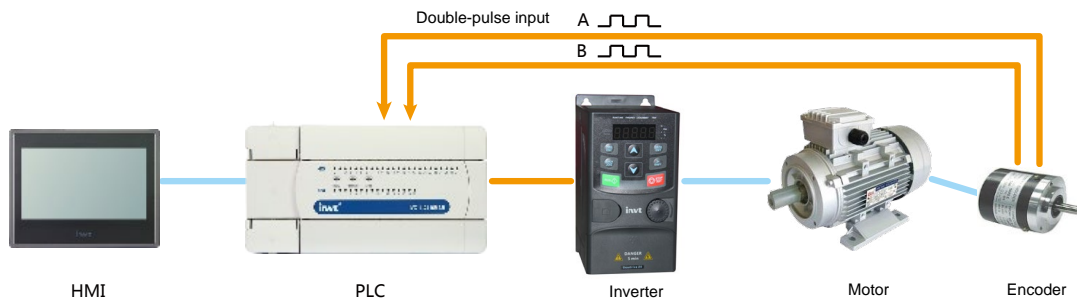
Two-layer network structure: A maximum of 16 PLCs on each layer, implementing the communication between PLCs on different layers.



High-speed input and output

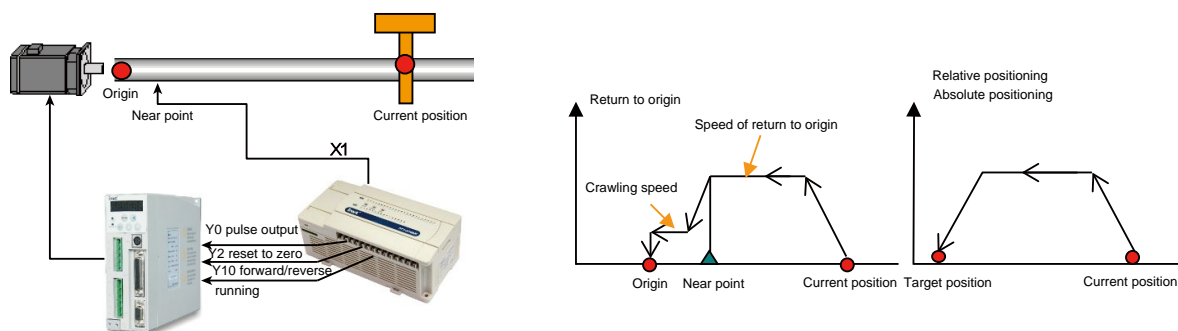
High-speed input

- High-speed input ports of X0 to X7, supporting functions including counting, pulse capture, external interruption, and frequency detection
- Supporting single-phase counting, single-phase increment and decrement counting, and two-phase counting
- Supporting the digital filtering function



High-speed output

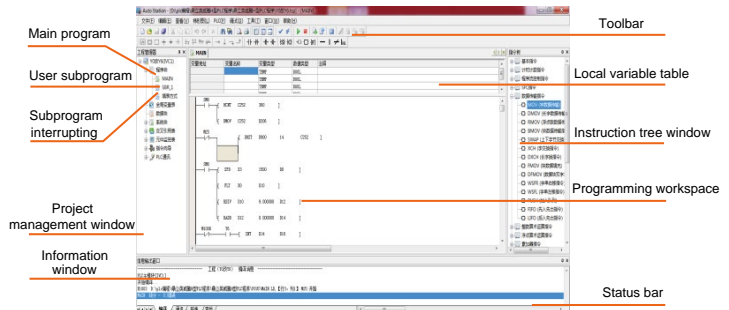
- Supporting a maximum of 3 100 kHz pulse output
- Supporting two modes, namely pulse train output (PTO) and pulse width modulation (PWM)
- Implementing the positioning control functions including the origin return (DSZR), pulse output with acceleration/deceleration (PLSR), and relative/absolute positioning (DRVI/DRVA)



Simplified program development

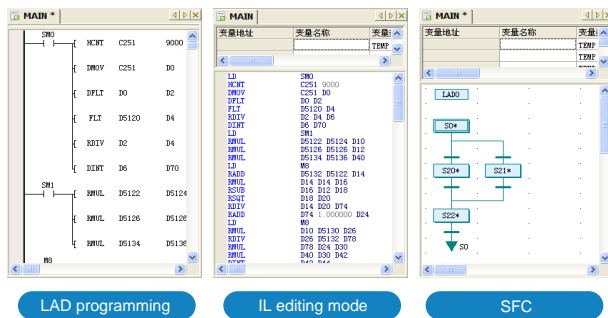
User-friendly programming interfaces

- Providing a project management window to facilitate the quick switching of the main program and subprograms
- Providing an information window to implementing the quick locating of program compiling errors
- Providing an instruction tree window to allow quick queries on the instruction library



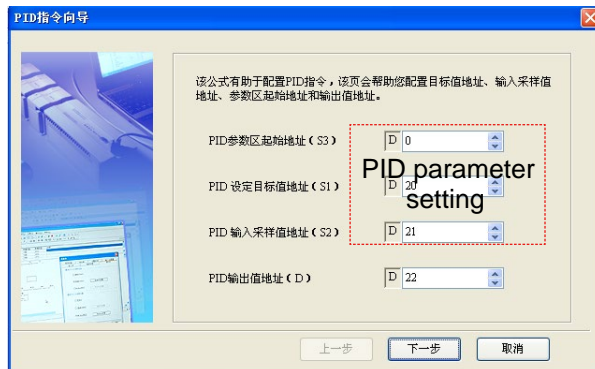
Supporting multiple programming languages

Programming languages, including the ladder diagram (LAD), instruction language (IL), and sequential function chart (SFC), are interchangeable.



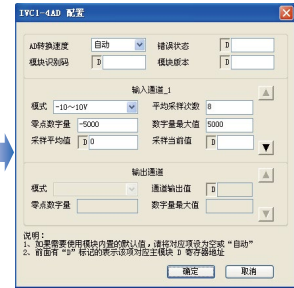
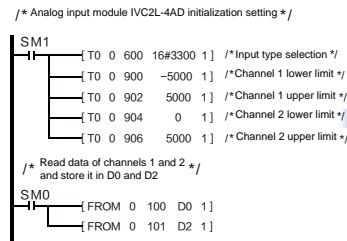
Practical instruction wizard

- Helping you quickly set the parameters including the complicated instruction addresses and input and output parameters
- Automatically generating execution subprograms to ensure the conciseness and accuracy of the program



Configuration function for extension modules

The AD, DA, TC, and PT extension modules of PLCs can be initialized by using the configuration function for special modules, which simplifies the initialization of function modules, and thus avoids the compiling of the complicated initialization instruction program.



Function configuration of the special module

Simple communication instruction

No complicated instruction is required. The communication function of the inverter can be implemented by using one instruction.

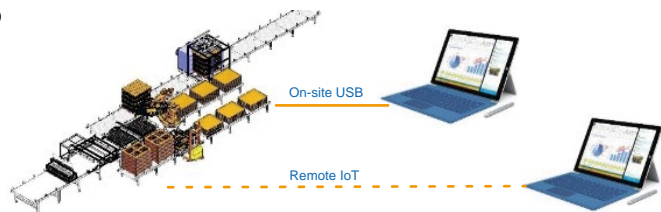
| 站号 | 型号 | 连接的串口 |
|----|--------|-------|
| 1 | CH2100 | COM1 |
| 2 | CHV190 | COM1 |

Modbus

IVFRQ (frequency setting), IVFWD (forward running)
 IVREV (reverse running), IVSTOP (stop),
 IVWRT (write into the register),
 IVRDST (obtain the parameters including the running frequency, output current, rotating speed, and output power)

Quick program download, commissioning, and monitoring

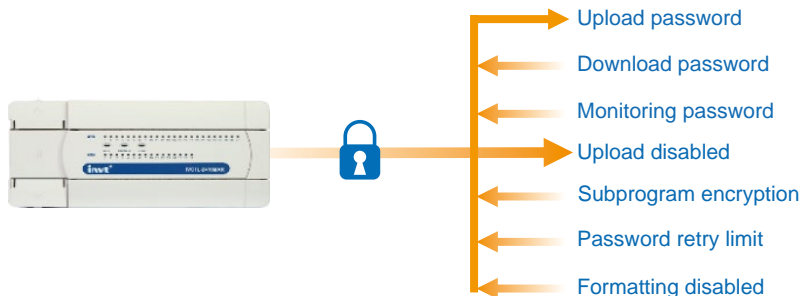
- Can be connected to a PC through the serial port to implement quick program commissioning and bug handling on the production site
- Can be connected to the Internet of Things (IoT) to perform remote device monitoring, program download, and start/stop operations



Safe and convenient use

Program encryption

Adopting a brand new password mechanism to provide multi-password protection, which improves the safety of the user program



Power failure protection

Using a FLASH storage device to store the user program and data, which prevents data loss due to power failure



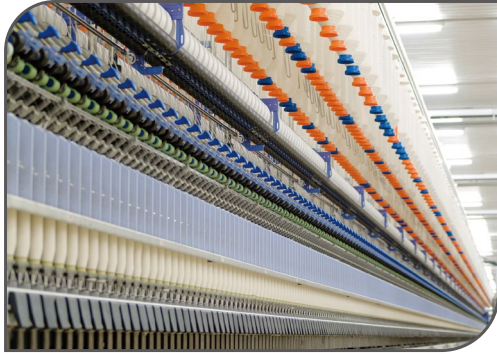
Design of rugged components

Using rugged input and output electronic components to ensure the long service life

| | | |
|-------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------|
| Mean time between failures (MTBF) | Relay output | 200,000 hours, fixed on the ground, with mechanical stress approximating zero and temperature and humidity control |
| | Transistor output | 100,000 hours, fixed on the ground, with mechanical stress approximating zero and temperature and humidity control |
| Service life of the output relay contacts | 220VAC/15VA/sensitive | 300,000 hours, fixed on the ground, with mechanical stress approximating zero and temperature and humidity control |
| | 220VAC/30VA/ sensitive | 150,000 hours, with mechanical stress approximating zero and temperature and humidity control |
| | 220VAC/72VA/ sensitive | 1s ON/1s OFF, 3,200,000 times |
| | | 1s ON/1s OFF, 1,200,000 times |
| | | 1s ON/1s OFF, 300,000 times |

/ Typical industrial application

IVC products are widely used in the manufacturing of mechanical equipment, including the textile machinery, machine tools, metal processing machinery, food machinery, packaging machinery, construction machinery, and printing machinery.



Textile machinery



Machine tools



Metal processing machinery



Food machinery



Packaging machinery



Construction machinery

Product technical specifications

| Specification name | | IVC2L | IVC1L | IVC1S |
|--------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| I/O | Max. number of logical IO points | 512 | 128 | 60 |
| | Max. number of special extension modules | 8 | 7 | None |
| | High-speed pulse output | Two 100 kHz outputs (transistor output) | Three 100 kHz outputs (transistor output) | Two 100 kHz outputs (transistor output) |
| | Single-phase counting channel | Two 50 kHz channels + four 10 kHz channels | Two 50 kHz channels + four 10 kHz channels | Six 10 kHz channels |
| | Two-phase counting channel | One 30 kHz channel + one 5 kHz channel | One 30 kHz channel + one 5 kHz channel | Two 5 kHz channels |
| | Digital filtering | Applying digital filtering for X0 to X7, input filtering Constant range: 0–60 ms | Applying digital filtering for X0 to X7, input filtering Constant options: 0, 2, 4, 8, 16, 32, 64 ms | Applying digital filtering for X0 to X7, input filtering Constant options: 0, 2, 4, 8, 16, 32, 64 ms |
| Storage device | Program capacity | 12k steps | 16k steps | 6k steps |
| | Permanent storage after program power outage | Yes | Yes | Yes |
| | Soft component for uninterrupted output at power outage | User-defined | Bit component: all range; word component: 1700 | Bit component: all range; word component: 1700 |
| | Hardware support | Backup battery for storage of 3 years | Flash for permanent storage | Flash for permanent storage |
| Soft components | Timer | 100 ms precision: T0–T209 | 100 ms precision: T0–T209 | 100 ms precision: T0–T209 |
| | | 100 ms precision: T210–T251 | 100 ms precision: T210–T251 | 100 ms precision: T210–T251 |
| | | 1 ms precision: T252–T256 | 1 ms precision: T252–T256 | 1 ms precision: T252–T256 |
| | Counter | 16-bit increment counter: C0–C199 | 16-bit increment counter: C0–C199 | 16-bit increment counter: C0–C199 |
| | | 32-bit increment and decrement counter: C200–C235 | 32-bit increment/decrement counter: C200–C235 | 32-bit increment/decrement counter: C200–C235 |
| | | 32-bit high-speed counter: C236–C255 | 32-bit high-speed counter: C236–C255 | 32-bit high-speed counter: C236–C255 |
| | Data register | D0–D7999 | D0–D7999 | D0–D7999 |
| | Local data register | V0–V63 | V0–V63 | V0–V63 |
| | Indexed addressing register | Z0–Z15 | Z0–Z15 | Z0–Z15 |
| | Special data register | SD0–SD511 | SD0–SD511 | SD0–SD511 |
| | Auxiliary relay | M0–M1999 | M0 ~ M2047 | M0 ~ M2047 |
| | Local auxiliary relay | LM0–LM63 | LM0–LM63 | LM0–LM63 |
| | Special auxiliary relay | SM0–SM511 | SM0–SM511 | SM0–SM511 |
| | Status relay | S0–S991 | S0–S1023 | S0–S1023 |
| Interruption resources | Internal timed interruption | 3 | 3 | 3 |
| | External interruption | 16 | 16 | 16 |
| | High-speed counting interruption | 6 | 6 | 6 |
| | Serial port interruption | 8 | 12 | 8 |
| | Interruption after PTO output | 2 | 3 | 2 |
| | Interruption after interpolation | / | / | / |
| | Interruption when passing a position | / | / | / |
| | Interruption at power outage | 1 | 1 | 1 |
| General | Running time of basic instructions | 0.09 μS | 0.2 μS | 0.2 μS |
| | Real-time clock | Supporting uninterrupted output of 3 years after power outage | Supporting a minimum of uninterrupted output of 45 days after power outage | None |
| | Analog potentiometer | 2, 8-bit precision | None | None |
| Communication | Communication interface | PORT0:RS232 | PORT0: RS232 | PORT0: RS232 |
| | | PORT1:RS232\RS485 | PORT1: RS485 | PORT1: RS485 |
| | | / | PORT2: RS485 | / |
| Communication protocol | Supporting Modbus, free-port, N:N, and programming port protocols | Supporting Modbus, free-port, N:N, and programming port protocols | Supporting Modbus, free-port, N:N, and programming port protocols | |
| Encryption measures | Password type | Upload password, download password, monitoring password, subprogram password | | |
| | Upload disabled | Supported | | |
| | Formatting disabled | Supported | | |
| Application instructions | Basic instruction | Available | Available | Available |
| | Complicated instruction | Available | Available | Available |
| | Clock instruction | Available | Available | None |
| | Date and clock comparison instruction | Available | Available | None |
| | Floating-point number operation instruction | Available | Available | Available |
| | Positioning instruction | Available | Available | Available |
| | High-speed IO instruction | Available | Available | Available |
| | Modbus and inverter instruction | Available | Available | Available |
| | Read/write EEPROM instruction | Available | None | None |
| | Control and calculation instruction | Available | Available | Available |
| | Character string instruction | None | None | None |
| | Batch data processing instruction | None | None | None |
| | Datasheet instruction | None | None | None |

Signal channel technical specifications

Electrical specifications of digital input channels

| Specification name | IVC2L / IVC1L / IVC1S | |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| | High-speed input | Common input |
| Signal input mode | Both the source and sink types are applicable, but the input types must be the same. | |
| Input impedance | IVC2L: 3.3k IVC1L: 1k IVC1S: 4k | IVC2L: 4.3k IVC1L: 4k IVC1S: 4k |
| Input current | IVC2L: 6.5 mA TYP IVC1L: 29 mA TYP IVC1S: 5.3 mA TYP | 5.3 mA TYP |
| ON voltage/current | 18V DC Min/4.5 mA Min | 18V DC Min/3 mA Min |
| OFF voltage/current | 4V DC Max/1 mA Max | 4V DC Max/1 mA Max |
| Digital filtering time | IVC2L: X0 to X7 can be adjusted within the range of 0 to 60 ms IVC1L/IVC1S: X0 to X7 can be adjusted by level within the range of 0 to 64 ms | IVC2L: Hardware filtering, 10 ms IVC1L/IVC1S: Hardware filtering, 10 ms |

Electrical specifications of digital output channels

| Specification name | IVC2L / IVC1L / IVC1S | |
|--------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Relay output | Transistor output |
| External power supply | 250V AC, 30V DC or lower | 5–24V DC |
| Circuit insulation | Mechanical insulation of relay | Optocoupler insulation |
| Action instruction | The indicator is on when the relay output contact is closed. | The indicator is on when the optocoupler is driven. |
| Open-circuit leakage current | / | Lower than 0.1 mA/3V DC |
| Min. load | 2 mA/5V DC | 5 mA/5–24V DC |
| Max. current of resistor load | 2A/1-point 8A/4-point common terminal 8A/8-point common terminal | 0.3A/1-point, 0.8A/4-point, 1.2A/6-point, 1.6A/8-point (For current larger than 8 points, the total current increases 0.1A for each increased point.) |
| Max. current of sensitive load | 220V AC, 80W | IVC2L/IVC1S: Y0, Y1: 7.2W/24V DC; others: 12W/24V DC IVC1L: Y0, Y1, Y2: 7.2W/24V DC; others: 12W/24V DC |
| Max. current of lamp load | 220V AC, 100W | IVC2L/IVC1S: Y0, Y1: 0.9W/24V DC; others: 1.5W/24V DC |
| ON response time | Max.time: 20 ms | IVC2L/IVC1S: Y0, Y1: 10 μs ; others: 0.5 ms |
| OFF response time | | IVC1L: Y0, Y1, Y2: 10 μs ; others: 0.5 ms |

Electrical specifications of analog input channels

| Specification name | IVC2L / IVC1L |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conversion precision | 12 bits |
| Analog circuit power supply | 24V DC, Max. allowable ripple voltage: 5%; 50 mA (external power supply or source of the main module) |
| Digital circuit power supply | IVC2L: 5V DC, 50 mA (internal power supply or active extension unit of the main module) IVC1L: 5V DC, 72 mA (internal power supply of the main module) |
| Number of used IO points | None |
| Conversion speed | 2 ms/channel |
| Voltage input range | -10~10V DC, -5~5V DC (input impedance of 1M Ω) |
| Current input range | -20~20 mA (input impedance of 250 Ω) |
| Digital input | Default setting: -2000~2000; Allowable range: -10000~10000 |
| Voltage resolution | 5 mV |
| Current resolution | 10 μ A |
| Overall precision | Full-scale range \pm 1% |
| Isolation | Analog circuits are isolated from digital circuits by using optocouplers; analog circuits are isolated from the external power supply through DC\DC isolation; and analog channels are not isolated from each other. |

Electrical specifications of thermistor input channels

| Specification name | IVC2L / IVC1L | |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Analog circuit power supply | 24V DC, Max. allowable ripple voltage: 5%; 50 mA (external power supply or source of the main module) | |
| Digital circuit power supply | IVC2L: 5V DC, 50 mA (internal power supply or active extension unit of the main module) IVC1L: 5V DC, 72 mA (internal power supply of the main module) | |
| Number of used IO points | None | |
| Input signal | Thermistor of the Pt100, Cu100, or Cu50 type | |
| Conversion speed | 15 ms/channel | |
| Conversion precision | 12-bit A/D conversion | |
| Digital output | Pt100: -1500~6000 (0.1°C) | Pt100 γ -2380~11120 (0.1°F) |
| | Cu100: -300~1200 (0.1°C) | Cu100: -220~+2480 (0.1°F) |
| | Cu50: -300~1200 (0.1°C) | Cu50: -220~+2480 (0.1°F) |
| Overall precision | Full-scale range \pm 1% | |
| Isolation | Analog circuits are isolated from digital circuits by using optocouplers; analog circuits are isolated from the internal module input power supply of 24V DC; and analog channels are not isolated from each other. | |

Electrical specifications of analog output channels

| Specification name | IVC2L / IVC1L |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conversion precision | 12 bits |
| Digital circuit power supply | 24V DC, Max. allowable ripple voltage: 5%; input current of 120 mA (external power supply or source of the main module) |
| Digital circuit power supply | IVC2L: 5V DC, 72 mA (internal power supply or active extension unit of the main module) IVC1L: 5V DC, 72 mA (internal power supply of the main module) |
| Number of used IO points | None |
| Conversion speed | 15 ms/channel |
| Voltage output range | -10~10V DC (impedance of the external load $\geq 2 \text{ k}\Omega$) |
| Current output range | 0~20 mA, 4~20 mA (impedance of the external load $\leq 520\Omega$) |
| Voltage resolution | 5 mV |
| Current resolution | 10 μA |
| Overall precision | Full-scale range $\pm 1\%$ |
| Isolation | Analog circuits are isolated from digital circuits by using optocouplers; analog circuits are isolated from the external power supply through DC\DC isolation; and analog channels are not isolated from each other. |

Electrical specifications of thermocouple input channels

| Specification name | IVC2L / IVC1L | |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Analog circuit power supply | 24V DC, Max. allowable ripple voltage: 5%; 50 mA (external power supply or source of the main module) | |
| Digital circuit power supply | IVC2L: 5V DC, 50 mA (internal power supply or active extension unit of the main module) IVC1L: 5V DC, 72 mA (internal power supply of the main module) | |
| Number of used IO points | None | |
| Input signal | Thermistor of the K, J, E, N, T, R, or S type | |
| Conversion speed | 240 ms/channel | |
| Conversion precision | 12-bit A/D conversion | |
| Digital output | K\N type: -1000~12000 (0.1°C) | K\N type: -1480~+21902 (0.1°F) |
| | J\E type: -1000~10000 (0.1°C) | J\E type: -1480~+18320 (0.1°F) |
| | T type: -2000~4000 (0.1°C) | T type: -3280~+7520 (0.1°F) |
| | R\S type: 0~16000 (0.1°C) | R\S type: 320~29120 (0.1°F) |
| Overall precision | Full-scale range $\pm 1\%$ | |
| Isolation | Analog circuits are isolated from digital circuits by using optocouplers; analog circuits are isolated from the internal module input power supply of 24V DC; and analog channels are not isolated from each other. | |

Note: IVC1S series controllers are compact products. They do not support extension modules.



IVC2L series programmable controller

Product introduction

IVC2L series products are general-purpose small-sized PLCs, which can be flexibly extended, provide quick communication, and are applicable to various complicated application scenarios.

- Supporting a maximum of 512-point I/O extension
- Supporting 6 high-speed pulse inputs and 2 high-speed pulse outputs
- Supporting extension of modules including the analog and temperature modules, and extension of RS485 communication
- Certified by EU Rosh



Main module models

| Model | Description | Dimensions (W×H×D) |
|---------------|-------------------------------------------------------------------------|--------------------|
| IVC2L-2012MAR | 20-point 24V DC input, 12-point relay output, 220V AC power supply | 158×90×82 mm |
| IVC2L-2012MAT | 20-point 24V DC input, 12-point transistor output, 220V AC power supply | 158×90×82 mm |
| IVC2L-3232MAR | 32-point 24V DC input, 32-point relay output, 220V AC power supply | 228×90×82 mm |
| IVC2L-3232MAT | 32-point 24V DC input, 32-point transistor output, 220V AC power supply | 228×90×82 mm |

Extension module models

| Model | Description | Dimensions (W×H×D) |
|---------------|-------------------------------------------------------------------------------------------------|--------------------|
| IVC2L-0808ENR | IVC2L series extension module, 8-point input, 8-point relay output | 58×90×82 mm |
| IVC2L-0808ENT | IVC2L series extension module, 8-point input, 8-point relay output | 58×90×82 mm |
| IVC2L-1600ENN | IVC2L series extension module, 16-point input | 58×90×82 mm |
| IVC2L-0016ENR | IVC2L series extension module, 16-point relay output | 58×90×82 mm |
| IVC2L-0016ENT | IVC2L series extension module, 16-point transistor output | 58×90×82 mm |
| IVC2L-1616EAR | IVC2L series extension module, 16-point input, 16-point relay output, 220V AC power supply | 158×90×82 mm |
| IVC2L-1616EAT | IVC2L series extension module, 16-point input, 16-point transistor output, 220V AC power supply | 158×90×82 mm |

Special function module models

| Model | Description | Dimensions (W×H×D) |
|-------------|-------------------------------------------------------|--------------------|
| IVC2L-4AD | IVC2L series extension module, 4 analog inputs | 58×90×82 mm |
| IVC2L-4DA | IVC2L series extension module, 4 analog outputs | 58×90×82 mm |
| IVC2L-4TC | IVC2L series extension module, 4 thermocouple modules | 58×90×82 mm |
| IVC2L-4PT | IVC2L series extension module, 4 thermistor modules | 58×90×82 mm |
| IVCS-EPM | Ethernet adapter | 56×82×26 mm |
| IVC2L-RS485 | RS485 extension module (isolation) | 32×90×82 mm |

Optional accessory models

| Model | Description | Dimensions (W×H×D) |
|---------|--------------------------------------------------------------------|--------------------|
| IVC-SL1 | PLC-VS series HMI communication cable | 3m |
| IVC-SL2 | PLC download cable (USB) | 2m |
| IVC-SL3 | PLC-VT/VK series HMI communication cable | 3m |
| IVC-SL4 | HMI download cable (USB) | 1.5m |
| IVC-SL5 | PLC-VT/VK series HMI communication cable | 7m |
| IVC-SL8 | Download cable (serial port)/PLC-VS series HMI communication cable | 7m |

IVC1L series programmable controller

Product introduction

IVC1L series products are smart small-sized PLCs, which are designed in a compact structure, provide strong functions, and support flexible I/O configuration.

- Supporting a maximum of 128-point I/O extension
- Supporting 2 AB phase inputs, 6 single-phase high-speed pulse inputs, and 3 high-speed pulse outputs
- Providing multiple main modules with different I/O configurations, different input power supplies, and integrated analog channels
- Providing three standard independent serial communication ports: Port0 to Port2
- Certified by EU Rosh



Main module models

| Model | Description | Dimensions (W×H×D) |
|----------------|----------------------------------------------------------------------------------------------------------------------|--------------------|
| IVC1L-0806MAR | 8-point 24V DC input, 6-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-0806MAT | 8-point 24V DC input, 6-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1208MAR | 12-point 24V DC input, 8-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1208MAT | 12-point 24V DC input, 8-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1410MAR | 14-point 24V DC input, 10-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1410MAT | 14-point 24V DC input, 10-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1614MAR | 16-point 24V DC input, 14-point relay output, 220V AC power supply | 150×90×81.2 mm |
| IVC1L-1614MAT | 16-point 24V DC input, 14-point transistor output, 220V AC power supply | 150×90×81.2 mm |
| IVC1L-1614MAR1 | 16-point 24V DC input, 14-point relay output, 2 integrated analog inputs, 1 analog output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-1614MAT1 | 16-point 24V DC input, 14-point transistor output, 2 integrated analog inputs, 1 analog output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-2416MAR | 24-point 24V DC input, 16-point relay output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-2416MAT | 24-point 24V DC input, 16-point transistor output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-3624MAR | 36-point 24V DC input, 24-point relay output, 220V AC power supply | 224.5×90×81.2 mm |
| IVC1L-3624MAT | 36-point 24V DC input, 24-point transistor output, 220V AC power supply | 224.5×90×81.2 mm |

| Terminal-removable model | Description | Dimensions (W×H×D) |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------|
| IVC1L-0806MAR2 | 8-point 24V DC input, 6-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-0806MAT2 | 8-point 24V DC input, 6-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1208MAR2 | 12-point 24V DC input, 8-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1208MAT2 | 12-point 24V DC input, 8-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1410MAR2 | 14-point 24V DC input, 10-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1410MAT2 | 14-point 24V DC input, 10-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1L-1614MAR2 | 16-point 24V DC input, 14-point relay output, 220V AC power supply | 150×90×81.2 mm |
| IVC1L-1614MAT2 | 16-point 24V DC input, 14-point transistor output, 220V AC power supply | 150×90×81.2 mm |
| IVC1L-1614MAR6 | 16-point 24V DC input, 14-point relay output, 2 integrated analog inputs, 1 analog output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-1614MAT6 | 16-point 24V DC input, 14-point transistor output, 2 integrated analog inputs, 1 analog output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-2416MAR2 | 24-point 24V DC input, 16-point relay output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-2416MAT2 | 24-point 24V DC input, 16-point transistor output, 220V AC power supply | 182×90×81.2 mm |
| IVC1L-3624MAR2 | 36-point 24V DC input, 24-point relay output, 220V AC power supply | 224.5×90×81.2 mm |
| IVC1L-3624MAT2 | 36-point 24V DC input, 24-point transistor output, 220V AC power supply | 224.5×90×81.2 mm |

| DC power supply model | Description | Dimensions (W×H×D) |
|-----------------------|------------------------------------------------------------------------|--------------------|
| IVC1L-0806MDR | 8-point 24V DC input, 6-point relay output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-0806MDT | 8-point 24V DC input, 6-point transistor output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-1208MDR | 12-point 24V DC input, 8-point relay output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-1208MDT | 12-point 24V DC input, 8-point transistor output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-1410MDR | 14-point 24V DC input, 10-point relay output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-1410MDT | 14-point 24V DC input, 10-point transistor output, 24V DC power supply | 135×90×81.2 mm |
| IVC1L-1614MDR | 16-point 24V DC input, 14-point relay output, 24V DC power supply | 150×90×81.2 mm |
| IVC1L-1614MDT | 16-point 24V DC input, 14-point transistor output, 24V DC power supply | 150×90×81.2 mm |
| IVC1L-2416MDR | 24-point 24V DC input, 16-point relay output, 24V DC power supply | 182×90×81.2 mm |
| IVC1L-2416MDT | 24-point 24V DC input, 16-point transistor output, 24V DC power supply | 182×90×81.2 mm |
| IVC1L-3624MDR | 36-point 24V DC input, 24-point relay output, 24V DC power supply | 224.5×90×81.2 mm |
| IVC1L-3624MDT | 36-point 24V DC input, 24-point transistor output, 24V DC power supply | 224.5×90×81.2 mm |

Extension module models

| Model | Description | Dimensions (W×H×D) |
|---------------|-------------------------------------------------------------------------|--------------------|
| IVC1L-0808ENR | IVC1L series extension module, 8-point input, 8-point relay output | 61×90×81.2 mm |
| IVC1L-0808ENT | IVC1L series extension module, 8-point input, 8-point transistor output | 61×90×81.2 mm |
| IVC1L-1600ENN | IVC1L series extension module, 16-point input | 61×90×81.2 mm |
| IVC1L-0016ENT | IVC1L series extension module, 16-point transistor output | 61×90×81.2 mm |
| IVC1L-0016ENR | IVC1L series extension module, 16-point relay output | 61×90×81.2 mm |

Integrated PT models

| Model | Description | Dimensions (W×H×D) |
|-----------------|-----------------------------------------------------------------------------------------|--------------------|
| IVC1L-1010MAR-T | 10-point 24V DC input, 10-point relay output, 3 thermistor inputs, 220V AC power supply | 150×90×81.2 |
| IVC1L-1616MAR-T | 16-point 24V DC input, 16-point relay output, 2 thermistor inputs, 220V AC power supply | 182×90×81.2 |
| IVC1L-2424MAR-T | 24-point 24V DC input, 24-point relay output, 3 thermistor inputs, 220V AC power supply | 224.5×90×81.2 |

Special function module models

| Model | Description | Dimensions (W×H×D) |
|-----------|-----------------------------------------------------------------|--------------------|
| IVC1L-2AD | IVC1L series extension module, 2 analog inputs | 61×90×81.2 mm |
| IVC1L-2DA | IVC1L series extension module, 2 analog outputs | 61×90×81.2 mm |
| IVC1L-2TC | IVC1L series extension module, 2 thermocouple modules | 61×90×81.2 mm |
| IVC1L-2PT | IVC1L series extension module, 2 thermistor modules | 61×90×81.2 mm |
| IVC1L-4AD | IVC1L series extension module, 4 analog inputs | 61×90×81.2 mm |
| IVC1L-4DA | IVC1L series extension module, 2 analog outputs | 61×90×81.2 mm |
| IVC1L-4TC | IVC1L series extension module, 4 thermocouple modules | 61×90×81.2 mm |
| IVC1L-4PT | IVC1L series extension module, 4 thermistor modules | 61×90×81.2 mm |
| IVC1L-5AM | IVC1L series extension module, 4 analog inputs, 1 analog output | 61×90×81.2 mm |
| IVCS-EPM | Ethernet adapter | 56×82×26 mm |

Optional accessory models

| Model | Description | Dimensions (W×H×D) |
|---------|--------------------------------------------------------------------|--------------------|
| IVC-SL1 | PLC-VS series HMI communication cable | 3m |
| IVC-SL2 | PLC download cable (USB) | 2m |
| IVC-SL3 | PLC-VT/VK series HMI communication cable | 3m |
| IVC-SL4 | HMI download cable (USB) | 1.5m |
| IVC-SL5 | PLC-VT/VK series HMI communication cable | 7m |
| IVC-SL8 | Download cable (serial port)/PLC-VS series HMI communication cable | 7m |

IVC1S series programmable controller

Product introduction

IVC1S series products are compact micro PLCs on which functions are highly integrated. They are highly cost-effective in scenarios where a small number of points are applied.

- Supporting a maximum of 60 I/O points; do not support module extension
- Supporting 2 AB phase inputs, 6 single-phase high-speed pulse inputs, and 2 high-speed pulse outputs
- Certified by EU Rosh



Main module models

| Model | Description | Dimensions (W×H×D) |
|---------------|-------------------------------------------------------------------------|--------------------|
| IVC1S-0806MAR | 8-point 24V DC input, 6-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-0806MAT | 8-point 24V DC input, 6-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-1208MAR | 12-point 24V DC input, 8-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-1208MAT | 12-point 24V DC input, 8-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-1410MAR | 14-point 24V DC input, 10-point relay output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-1410MAT | 14-point 24V DC input, 10-point transistor output, 220V AC power supply | 135×90×81.2 mm |
| IVC1S-1614MAR | 16-point 24V DC input, 14-point relay output, 220V AC power supply | 150×90×81.2 mm |
| IVC1S-1614MAT | 16-point 24V DC input, 14-point transistor output, 220V AC power supply | 150×90×81.2 mm |
| IVC1S-2416MAR | 24-point 24V DC input, 16-point relay output, 220V AC power supply | 182×90×81.2 mm |
| IVC1S-2416MAT | 24-point 24V DC input, 16-point transistor output, 220V AC power supply | 182×90×81.2 mm |
| IVC1S-2424MAR | 24-point 24V DC input, 24-point relay output, 220V AC power supply | 224.5×90×81.2 mm |
| IVC1S-2424MAT | 24-point 24V DC input, 24-point transistor output, 220V AC power supply | 224.5×90×81.2 mm |
| IVC1S-3624MAR | 36-point 24V DC input, 24-point relay output, 220V AC power supply | 224.5×90×81.2 mm |
| IVC1S-3624MAT | 36-point 24V DC input, 24-point transistor output, 220V AC power supply | 224.5×90×81.2 mm |

Optional accessory models

| Model | Description | Dimensions (W×H×D) |
|---------|--------------------------------------------------------------------|--------------------|
| IVC-SL1 | PLC-VS series HMI communication cable | 3m |
| IVC-SL2 | PLC download cable (USB) | 2m |
| IVC-SL3 | PLC-VT/VK series HMI communication cable | 3m |
| IVC-SL4 | HMI download cable (USB) | 1.5m |
| IVC-SL5 | PLC-VT/VK series HMI communication cable | 7m |
| IVC-SL8 | Download cable (serial port)/PLC-VS series HMI communication cable | 7m |

INVT industrial automation products



■ HMI

- Reliable performance, providing multiple series of products, such as the VS and VK series
- Abundant industrial Vector gallery, facilitating the configuration



■ Motion controller

- Various motion control cards
- Whole series of motion controller
- Robot control system
- Customized numerical control system



■ Servo system

- General-purpose servo control systems
- Specilized servo systems, such as the electro-hydraulic and spinning machine system



■ Inverter

- Most complete inverter production line in the industry, covering the low, medium, and high voltage classes
- Capable of providing customized industrial products based on customer needs

Domestic sales service network



National service hotline:
400-700-9997

30 domestic offices, together with a growing number of warranty centers and after-sale service centers, form a comprehensive sales service network to provide fast response.

Overseas sales service network



- INVT Sales & Service in 9 countries: Russia, India, Thailand, UAE, Italy, UK, Germany, Australia, Mexico
- Sales and Service Partners in 57 countries

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Fax: 0755-86553030

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|-------------------------------|------------|----------------|-----------------------------------|----------------------------------------------------|
| Industrial automation: | ■ Inverter | ■ Servo system | ■ Motor, electric spindle | ■ Electronic control system |
| | ■ HMI | ■ PLC | ■ Traction system of rail transit | ■ Intelligent elevator control system |
| Energy power | ■ SVG | ■ PV inverter | ■ UPS | ■ Online management system for energy reduction |
| | | | | ■ Electronic control system for new energy vehicle |

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