INOVANCE

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GL20-4AD/GL20-4AD-DZ Series Analog Input Module

Equipment Guide

Industrial Automation | New Energy Vehicle | Intelligent Elevator | Intelligent Robot | Digital Energy | Rail Transit

Data code PS00021885A01

Legal Information

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Disclaimer of Liability

Due to continuous updates and improvements of products and technologies, the content of this documentation may not fully match the actual products. In the event of any discrepancies, the actual products shall prevail.

The contents are subject to change without notice due to product upgrade.

Waste Disposal

The storage, use, and disposal of this product (including optional accessories) must comply with local laws and regulations.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel can identify the risks of the product/system and prevent possible dangers.

Proper Use of the Product

Proper transportation, storage, assembly, installation, commissioning, operation, and maintenance are required to ensure the safe operation of the product without any problems. The required ambient conditions must be met. All operations must follow the guidelines provided in this documentation.

Preface

Introduction

This guide includes the product overview, model and nameplate, components, terminal wiring, as well as technical and environmental specifications of the module.

Target audience

This guide is primarily intended for the following engineers:

- Business development/Service engineers of Inovance
- Chief technical engineers of channel partners/end users
- Mechanical engineers of channel partners/end users
- Electrical engineers of channel partners/end users
- Software engineers of channel partners/end users
- Maintenance/Service engineers of channel partners/end users

Documentation guide

The product documentation package consists of an equipment guide and a system guide, enabling users to quickly access the information they need.

- Equipment guide: Contains a brief description of module properties, including model, components, technical specifications, and terminal wiring diagrams.
- System guide: Covers all typical application scenarios of the system, encompassing system introduction, installation, wiring, configuration and commissioning, troubleshooting, and maintenance.

Standard

The following table lists the certifications, directives, and standards that the product may comply with. For details about the acquired certificates, see the certification marks on the product nameplate.

Certification	Directive		Standard
CE certification	EMC directive	2014/30/EU	**24 VDC products:** EN 61131-2 **220 VAC products:** EN 61131-2 EN 61000-3-2 EN 61000-3-3
	LVD directive	2014/35/EU	EN 61010-1 EN 61010-2-201
	RoHS directive	2011/65/EU amended by (EU) 2015/863	EN IEC 63000
UL/cUL certification	-		UL 61010-1 UL 61010-2-201 CAN/CSA-C22.2 No. 61010-1 CSA C22.2 NO. 61010-2-201

Certification	Directive		Standard
KCC certification	-		-
EAC certification	-		-
UKCA certification	Safety regulations	Electrical Equipment (Safety) Regulations 2016	EN 61010-1 EN 61010-2-201
	EMC regulations	Electromagnetic Compatibility Regulations 2016	**24 VDC products:** EN 61131-2 **220 VAC products:** EN 61131-2 EN 61000-3-2 EN 61000-3-3
	RoHS regulations	Directive (RoHS) Regulations 2012	EN IEC 63000

More documents

Name	Code	Description
GL20 Series Module System Guide	PS00022010	Covers all typical application scenarios of the system, providing detailed descriptions of system configuration, installation, wiring, commissioning, and troubleshooting.
GL20-4AD/GL20-4AD-DZ Series Analog Input Module Equipment Guide (This guide)	PS00021885	Includes the product overview, model and nameplate, components, terminal wiring, as well as technical and environmental specifications of the module.

Revision history

Date	Version	Description
April 2026	A01	Updated *"1.1 General Safety Instructions" on page 5*.
December 2025	A00	First release.

Access to the guide

This guide is not delivered with the product. You can download the PDF version in the following ways:

- Visit https://www.inovance.com/global, choose Service&Support > Support > Documentation Download.
- Scan the **QR code** on the product with your smartphone.
- Scan the QR code below to install **My Inovance app**, where you can search for and download the guide.

Warranty

Inovance provides warranty service within the warranty period (as specified in your order) for any fault or damage that is caused by proper operation of the user. Maintenance will be charged after the warranty expires.

Even within the warranty period, maintenance can be charged for the following product damage:

- Damage caused by operations not following the instructions in the guide
- Damage caused by fire, flood, or abnormal voltage
- Damage caused by using the product for unintended functions
- Damage caused by using the product outside the specified scope
- Damage or secondary damage caused by force majeure (natural disaster, earthquake, and lightning strike)

When applicable, relevant maintenance fee will be charged according to the latest Price List of Inovance. If otherwise agreed upon, the agreed terms and conditions shall prevail.

For details, see the Warranty Card.

1 Fundamental Safety Instructions

1.1 General Safety Instructions

Safety Disclaimer

1. Read and comply with the safety instructions during installation, operation, and maintenance of the product.
2. To ensure personal and equipment safety, observe the notes indicated on the product labels and all the safety instructions in the user guide.
3. The "CAUTION", "WARNING", and "DANGER" are only supplements to the safety instructions.
4. Use this product according to the designated environment requirements. Damage caused by improper use is not covered by warranty.
5. Inovance shall take no responsibility for any personal injury or property damage caused by improper use.

Safety Levels and Definitions



The "DANGER" sign indicates that failure to comply with the notice will result in death or serious injury.



The "WARNING" sign indicates that failure to comply with the notice could result in death or serious injury.



The "CAUTION" sign indicates that failure to comply with the notice could result in minor or moderate injury, or equipment damage.

Unpacking
 • Do not install the product in the case of any damage, rust, or signs of use on the product or accessories upon unpacking. • Do not install the product in the case of water seepage into the product or missing or damaged components upon unpacking. • Do not install the product in the case of any discrepancy between the product you received and the product name on the packing list.
 • Check whether the packing is intact and whether there is damage, water seepage, dampness, and deformation before unpacking. • Unpack the package by following the unpacking sequence. Do not strike the package violently. • Check for damage, rust, or dents on the surfaces of the product and accessories upon unpacking. • After unpacking, check the contents against the packing list to ensure that the equipment and accessories are in the correct quantities, and that all documentation is complete.

Storage and transportation



- Large or heavy equipment must be handled by qualified professionals using specialized hoisting equipment. Failure to comply could result in personal injury or equipment damage.
- Before hoisting the equipment, ensure that components such as the front cover and terminal blocks are secured firmly with screws. Loosely connected components may fall off and result in personal injury or equipment damage.
- Never stand or stay under the equipment while it is being hoisted.
- When hoisting the equipment with a steel rope, ensure the equipment is hoisted at a constant speed without suffering from vibration or shock. Do not turn the equipment over or let the equipment stay hanging in the air. Failure to comply could result in personal injury or equipment damage.



- Handle the equipment with care and mind your steps during transportation to prevent personal injury or equipment damage.
- When carrying the equipment with bare hands, hold the equipment casing firmly with care to prevent parts from falling. Failure to comply could result in personal injury.
- Store and transport the equipment based on the storage and transportation requirements. Failure to comply could result in equipment damage.
- Do not store or transport the equipment in locations where the equipment may be exposed to splashing water or rain, direct sunlight, strong electric field, strong magnetic field, or strong vibration.
- Store the equipment for up to three months. Take stricter protective measures and carry out the necessary inspections for a longer storage time.
- Pack the equipment securely and properly before transportation. Use a fully enclosed container for long-distance transportation.
- Do not transport the equipment with other devices or materials that may harm or have negative impacts on the equipment.

Design



- Design a safety circuit and add an error handling program in the software to ensure the product remains in a safe state upon external power failure or product faults.
- If a sustained overcurrent occurs due to overload or load short circuit, the product may smoke or catch fire. An external safety device (such as a fuse or circuit breaker) must be installed.



- When an output unit such as a relay or transistor in the equipment is damaged, the output may become uncontrollable and remain ON or OFF for a long period.
- The equipment design must comply with the overvoltage category requirements specified in the environmental specifications. The power supply must have a system-level lightning protection device, assuring that overvoltage due to lightning shock cannot be applied to the power supply input terminals, signal input terminals, or output terminals, to prevent equipment damage.
- Ensure that appropriate actions have been taken to prevent product malfunction caused by a communication fault between the product and related devices. Failure to comply could cause personal injury or equipment damage.



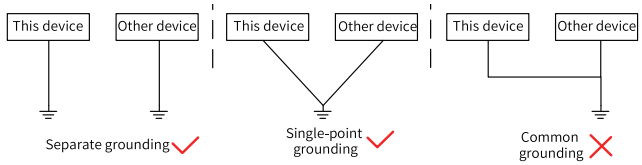
Switches that could cause personal injury or equipment damage must not be configured on the touch screen. Use independent switches for performing critical operations. Failure to comply could result in accidents caused by wrong outputs or faults.

Installation
DANGER This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.
WARNING • Read through the guide and safety instructions before installation. • Do not install this equipment in places with strong electric or magnetic field. • Before installation, ensure that the mechanical strength of the installation site can bear the weight of the equipment. Failure to comply will result in mechanical hazards. • Before installation, ensure that the installation site meets the required environmental conditions. Failure to comply could result in equipment damage. • Do not wear loose clothes or accessories during installation. Failure to comply could result in electric shock. • When installing the equipment in an enclosed environment (such as a cabinet or case), use cooling devices (such as fans or air conditioners) to cool the space and meet the installation environment requirements. Failure to do so could result in equipment overheating or fire. • Do not retrofit this equipment. • Do not fiddle with the bolts used to fix equipment components or the bolts marked in red. • This equipment must be installed inside an indoor cabinet or terminal equipment. The cabinet or terminal equipment itself must be provided with the necessary protective enclosures, such as a fireproof enclosure, an electrical protective enclosure, and a mechanical protective enclosure. The IP rating of these enclosures must comply with the relevant IEC standards, and applicable local laws and regulations. • Before installing devices with strong electromagnetic interference, such as a transformer, install a shielding device for the equipment to prevent malfunction. • Install the equipment onto a non-combustible object such as metal. Keep the equipment away from combustible objects. Failure to comply could result in fire. • For any equipment not supporting hot swapping, disconnect all external power supplies of the system before installing/disassembling the equipment. Failure to comply could result in electric shock, product failure, or malfunction.
CAUTION • Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the product and causing faults. After installation, remove the covering to prevent it from blocking the vent, which may affect the heat dissipation and cause the equipment to overheat. • During installation, ensure the equipment is connected to the respective connector securely and hook the equipment firmly. Improper installation may result in malfunction, fault, or fall-off.

Wiring

DANGER

- This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.
- Before wiring, disconnect all the power supplies of the equipment. Wait for at least the time designated on the warning label before further operations because residual voltage still exists after power-off. After waiting for the designated time, measure the DC voltage in the main circuit to ensure the DC voltage is within the safe voltage range. Failure to comply could result in electric shock.
- Do not perform wiring, remove the equipment cover, or touch the circuit board with power ON. Failure to comply could result in electric shock.
- Ensure that the equipment is grounded properly. Failure to comply could result in electric shock. Separate grounding or single-point grounding, other than common grounding, is recommended.



- Insulate the cable terminals properly to ensure the insulation distance between cables will not be shortened after cables are connected to the terminal block. Failure to comply could result in electric shock or equipment damage.
- Install the terminal cover attached to the equipment before power-on or operation after wiring is completed. Failure to comply could result in electric shock.

WARNING

- Never connect the power cable to output terminals of the equipment. Failure to comply could cause equipment damage or even fire.
- Cables used for wiring must comply with the requirements for the cross-sectional area and shielding. The shielding layer of the shielded cable must be reliably grounded at one end.
- Tighten the terminal screws with the torque specified in the user guide. Insufficient or excessive torque may cause overheating and damage to the joint, which could result in fire.
- After wiring is done, ensure that all cables are connected properly and no screws, washers or exposed cables are left inside the equipment. Failure to comply could result in electric shock or equipment damage.

CAUTION

- Follow the proper electrostatic discharge (ESD) procedure, and wear an anti-static wrist strap to perform wiring. Failure to comply could damage the equipment or its internal circuits.
- Use shielded twisted pairs for the control circuit. Connect the shield to the grounding terminal of the equipment for grounding purpose. Failure to comply will result in equipment malfunction.

Power-on

DANGER

- This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.
- Before power-on, ensure that the equipment is installed and wired properly.
- Ensure that the power supply meets equipment requirements before power-on to prevent equipment damage or fire accident.
- Do not open the cabinet door or protective cover of the product, touch any wiring terminal of the product, or remove any components or parts while the product is powered on. Failure to comply could result in personal injury or even death.

WARNING

Perform a trial run after wiring to ensure the equipment operates safely. Failure to comply could result in personal injury or equipment damage.

Operation

DANGER

- The equipment must be operated only by professionals. Failure to comply can result in injury or death.
- Do not touch any connecting terminals or disassemble any unit or component of the equipment during operation. Failure to comply could result in electric shock.

WARNING

- Do not touch the enclosure, fan, or resistor with bare hands. Failure to comply could result in burns.
- Prevent metal or other objects from falling into the equipment during operation. Failure to comply could result in fire or equipment damage.
- During operation, do not bring live parts into contact with the metal enclosure of the product. Failure to comply could result in fire or product damage.

CAUTION

- Operate the equipment within the specified environmental conditions. Failure to comply could result in equipment failure or damage.
- Touch the HMI panel with hands only. Failure to comply could cause panel damage, which is out of the warranty range.

Safety recommendations

- In positions where the operator directly touches the mechanical parts, for example, where a mechanical device is loaded/unloaded, or where a machine runs automatically, manually-operated devices or other alternative means must be carefully designed so that they are independent of the equipment to start or stop the automatic operation of the system.
- If you need to modify the program while the system is running, use the lock function or other protection measures to ensure that only authorized personnel can make the necessary modifications.

Battery usage

WARNING

- Do not use batteries that do not meet the product requirements. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not throw batteries into a fire or heat oven. Do not crush or cut the battery. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not expose the battery to extremely high temperatures. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not swallow batteries. Failure to comply could result in chemical burns.
- If a button battery is swallowed by accident, seek medical treatment immediately. Failure to comply may result in severe internal burns within two hours, which may cause death.

CAUTION

- Keep the batteries away from children.
- If the battery compartment is not shut tight, stop using the product and keep it away from children.

Maintenance

DANGER

- Maintenance must be performed only by trained and qualified electrical personnel.
- Do not maintain the equipment with power ON. Failure to comply could result in electric shock.
- Before maintenance, disconnect all the power supplies of the equipment and wait for at least the time specified on the warning label.
- Disconnect all external power supplies of the system before cleaning the equipment or re-tightening screws on the terminal block or screws for connector installation. Failure to comply could result in electric shock.
- Disconnect all external power supplies of the system before removing or installing the product, or connecting or disconnecting cables. Failure to comply could result in electric shock or malfunction.

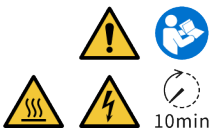
Maintenance
WARNING Perform routine and periodic inspection and maintenance on the equipment according to maintenance requirements and keep a maintenance record.

Repair
DANGER • Repair must be performed only by trained and qualified electrical personnel. • Do not repair the equipment with power ON. Failure to comply could result in electric shock. • Before inspection or repair, disconnect all the power supplies of the equipment and wait for at least the time specified on the warning label.
WARNING • Submit the repair request according to the warranty agreement. • When the fuse is blown or the circuit breaker or earth leakage circuit breaker (ELCB) trips, wait for at least the time designated on the equipment warning label before power-on or further operations. Failure to comply could result in equipment damage, personal injury, or death. • When the equipment is faulty or damaged, require professionals to perform troubleshooting and repair by following repair instructions and keep a repair record. • Replace quick-wear parts of the equipment according to the replacement instructions. • Do not use damaged equipment. Failure to comply could result in death, personal injury, or severe equipment damage. • Recheck the wiring and reset the parameters after equipment replacement.

Disposal
WARNING • Dispose of the retired equipment in accordance with applicable national regulations and standards. Failure to comply could result in property damage, personal injury, or death. • Recycle retired equipment in accordance with industry waste disposal standards to avoid environmental pollution. • Treat the scrapped equipment as industrial waste. Dispose of the batteries according to local laws and regulations.

Safety Label

To ensure safe operation, comply with safety labels on the equipment and do not damage or remove the labels. The following table describes the meanings of the safety labels.

Safety Label	Description
	• Before using the equipment, read through the user guide and safety precautions carefully. Failure to comply may result in personal injury, death, or equipment damage. • Do not touch the terminals or remove the cover with power-on or within 10 min after power-off. Failure to comply could result in electric shock. • The surface of the product may become very hot during operation. Do not touch these hot areas, as this may cause burns!

1.2 Industrial Information Security

The product provides an interface to connect to the network and transmit data through the network interface. To protect factories, systems, machines, and networks from cyber attacks, a proper

industrial information security protection mechanism must be implemented to ensure safe operation of factories, systems, machines, and networks.

The customer is responsible for providing and continuously ensuring a secure connection between the product and the customer network or any other network to prevent unauthorized access to its factories, systems, machines, and networks. The system and device can be connected to the corporate network or Internet only when they are connected securely with appropriate security measures taken (for example, anti-virus software and firewall installation).

Inovance is committed to continuous development and improvement of the products and solutions to improve the level of safety. It is strongly recommended to update the product promptly and always use the latest version.

Caution

Tampering with software (such as viruses, Trojans, and Worms) can lead to unsafe drive state, which can put the device in an unsafe operation state. This may result in death, serious injury, and property damage. Observe the following strictly.

- Always use the latest software version. If the product version is no longer supported or the latest version of the program is not applied, customers are at increased risk of cyber-attacks.
- Take proper protection measures (including but not limited to deploying antivirus software, firewall, WAF, IPS/IDS, situational awareness system, ID verification, and data encryption) to prevent files in the mobile storage device from being damaged by malware and protect products, networks, systems, and interfaces from unauthorized access, disturbance, intrusion, data disclosure, or information theft.
- Check all safety-related interfaces and settings after commissioning.

2 Product Introduction

GL20-4AD (differential input) and GL20-4AD-DZ (single-ended input) are 4-channel analog input modules. The modules support voltage and current input modes, and feature a resolution of up to 16 bits. They are applicable to GL20 series communication interface modules (such as GL20-RTU-ECT).

3 Model and Nameplate

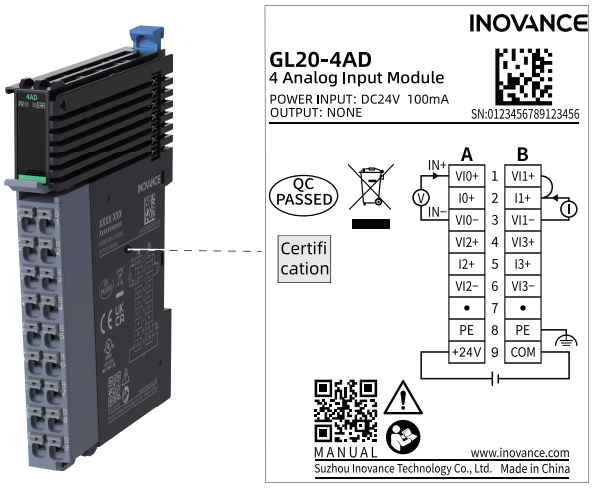
Model

GL ① 20 ② - 4 ③ AD ④ - DZ ⑤

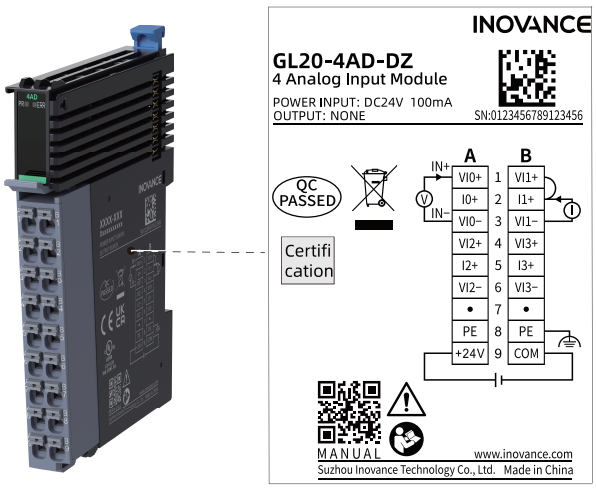
① **Product information** GL: General local module	④ **Module Type** • AD: Analog input • DA: Analog output • AM: Hybrid module • PT: Thermal resistor temperature detection • TC: Thermocouple temperature detection
② **Series** 20: 20 series module	⑤ **Board Type** DZ: High speed
③ **Number of I/O Channels** • 4: 4 channels • 8: 8 channels	-

Nameplate description

- GL20-4AD nameplate information:



- GL20-4AD-DZ nameplate information:

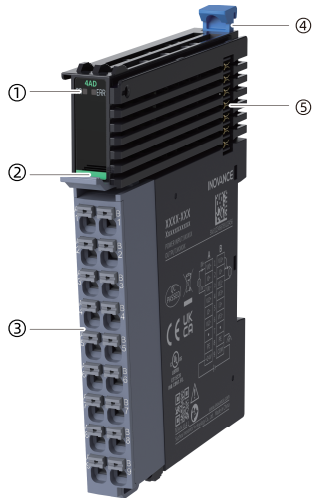


Based on the above model and nameplate information, the relevant ordering data for this product is as follows:

Model	Description	Product Code	Applicable Model
GL20-4AD	GL20 series 4-channel analog input module (differential input)	01441378	Applicable to GL20 series communication interface modules (for example, GL20-RTU-ECT32)
GL20-4AD-DZ	GL20 series 4-channel analog input module (single-ended input)	01441336	

4 Components

The components of GL20-4AD and GL20-4AD-DZ are identical. Take the components of GL20-4AD as an example.



No.	Name	Description			
①	Signal indicator	PR (POWER +RUN)	Power/Operation indicator	Yellow-green	• Solid on: The module is in normal operation. • Fast flashing: The module is addressed successfully. • Slow flashing: The module is powered on but not addressed. • Off: The module is not powered on or is faulty.
		ERR	State machine fault indicator	Red	On: The state machine is faulty.
②	Color identification		Red: Digital output		Orange: Analog output
			Gray: Digital input		Green: Analog input
			White: Communication		Blue: Other modules
③	Push-in terminal block	Pluggable terminal block with spring clamp wiring. The terminal block features "AB" silkscreen marking. For detailed definitions, see *"5.1 Terminal Assignment" on page 16*			
④	Rail mounting latch	Used to secure the module to the DIN rail			
⑤	Three-position terminal block	Used for backplate bus power supply and communication			

5 Terminal Wiring

5.1 Terminal Assignment

The terminals of GL20-4AD and GL20-4AD-DZ are identical. Take the terminals of GL20-4AD as an example.



Left Signal	Left Terminal	Right Terminal	Right Signal
VI0+	A1	B1	VI1+
I0+	A2	B2	I1+
VI0-	A3	B3	VI1-
VI2+	A4	B4	VI3+
I2+	A5	B5	I3+
VI2-	A6	B6	VI3-
-	A7	B7	-
PE	A8	B8	PE
24 V	A9	B9	COM

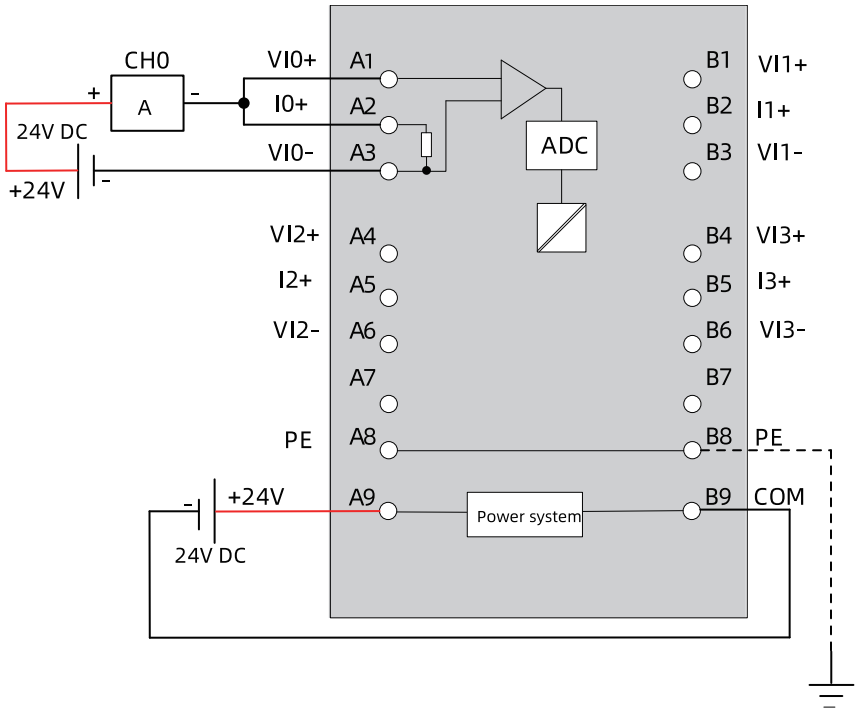
5.2 Terminal Wiring Diagram

Precautions

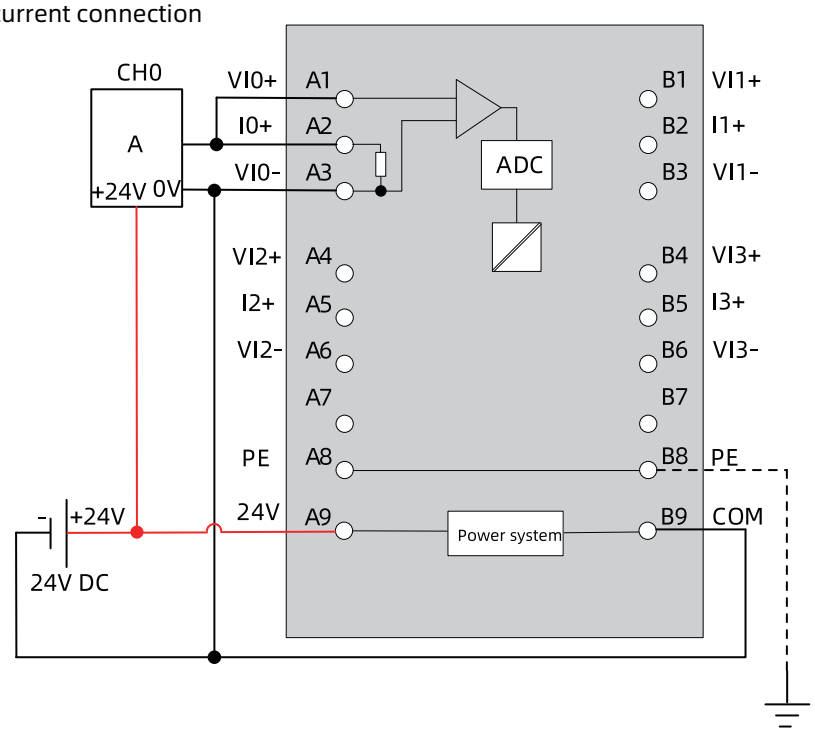
- Do not bundle the expansion cable together with power cables (high voltage, large current) which produce strong interference signals; otherwise, it may be influenced by noise, surge and induction. Separate it from other cables and avoid cabling in parallel.
- Use the recommended cables and adapter boards for connection. It is recommended that shielded cables be used as extension cables to enhance anti-interference capacity.
- Apply single-point grounding for the shield of shielded cables and soldered cables.

Circuit block diagram and wiring diagram

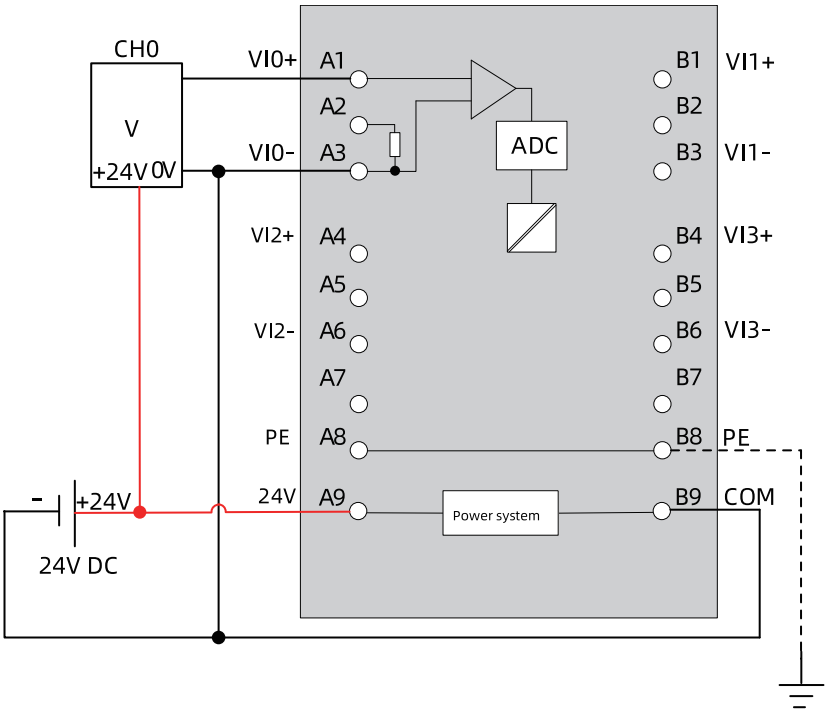
- Two-wire current connection



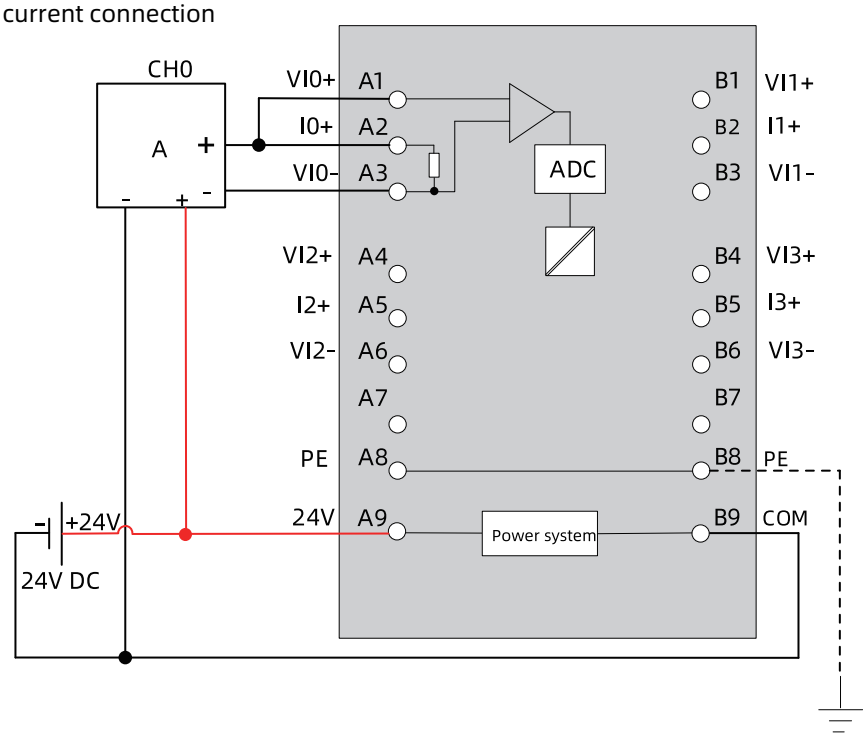
- Three-wire current connection



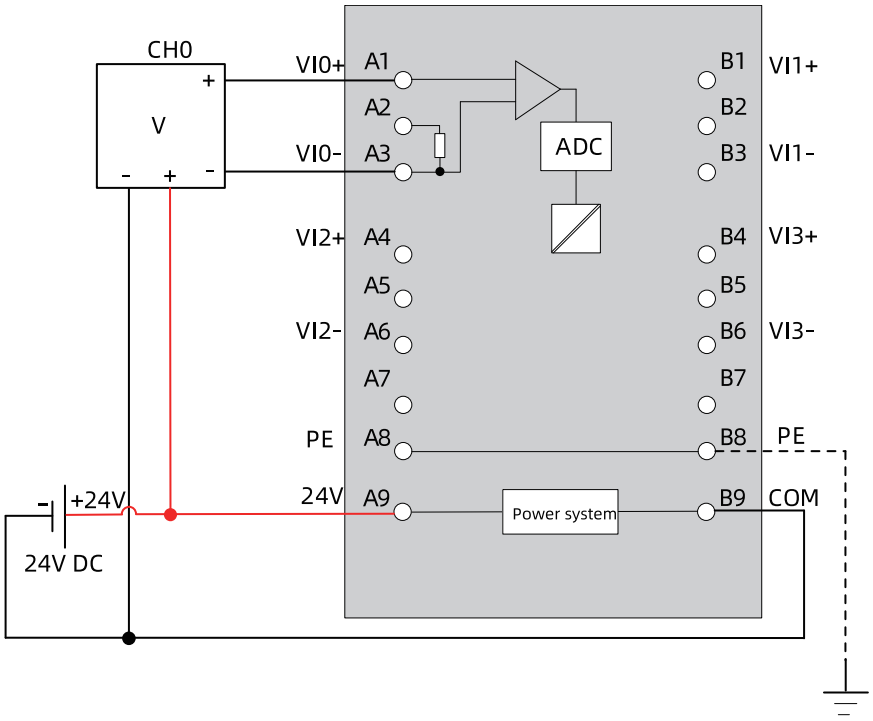
- Three-wire voltage connection



- Four-wire current connection



- Four-wire voltage connection


CH0
+
V
-
+
-
VI0+
VI0-
VI2+
VI2-
PE
24V
A1
A2
A3
A4
A5
A6
A7
A8
A9
ADC
Power system
B1
B2
B3
B4
B5
B6
B7
B8
B9
VI1+
VI1-
VI3+
VI3-
PE
COM
+24V
24V DC

6 Technical Specifications

Mechanical specifications

Item	Specification
IP rating	IP20
Dimensions (W × H × D)	12 mm × 100 mm × 75 mm
Weight	Approx. 60 g

Power supply specifications

Item	Specification
Rated bus input voltage	5 VDC (4.75 VDC to 5.25 VDC)
Rated bus input current	95 mA (typical@5 V)
Rated terminal input voltage	24 VDC (20.4 VDC to 28.8 VDC)
Rated terminal input current	100 mA (typical@24 V)
Rated terminal output voltage	/
Rated terminal output current	/
Hot-swapping	Not supported

Input specifications

Item	Specification
Input type	Analog input
Input mode	• GL20-4AD: Voltage/current input, differential input • GL20-4AD-DZ: Voltage/current input, single-ended input
Number of input channels	4
Resolution	16-bit
Voltage input range	±10 V, 0 V to 10 V, ±5 V, 0 V to 5 V, 1 V to 5 V
Voltage input impedance	1 MΩ
Voltage input accuracy (25°C)	±0.1% (full scale)
Voltage input accuracy (full temperature range)	±0.2% (full scale)
Voltage input limit	±15 V
Voltage input diagnosis	Wire break detection supported when the voltage input is set to 1 V to 5 V
Current input range	±20 mA, 0 mA to 20 mA, 4 mA to 20 mA
Current sampling impedance	250 Ω
Current input accuracy (25°C)	±0.1% (full scale)
Current input accuracy (full temperature range)	±0.2% (full scale)
Current input limit	±30 mA (transient), ±24 mA (average)
Current input diagnosis	Wire break detection supported only when the current input is set to 4 mA to 20 mA
Isolation	Not isolated between channels; isolated between channels and the power supply; isolated between channels and the bus
Input action display	/
Input derating	/

Software specifications

Item	Specification
Input PDO data volume	Max. 8 bytes
Independent channel configuration	Supported
Diagnostic reporting function	Supported
Diagnostic detection configuration	Supports voltage-based short-circuit detection and current-based wire break detection (This function is not supported for modes with output range containing 0.)
Conversion mode configuration	±10 V, 0 V to 10 V, ±5 V, 0 V to 5 V, 1 V to 5 V, ±20 mA, 0 mA to 20 mA, 4 mA to 20 mA
Filter parameter configuration	The configuration range is 1 to 255 with no units. The larger the filter parameter, the better the filtering effect.
Overlimit detection configuration	Supported
Peak hold configuration	Supported
Analog-to-digital conversion range	-20000 to +20000 -32000 to +32000 -27648 to +27648 For details, see the following table.
Conversion time	• GL20-4AD: 1 ms/channel • GL20-4AD-DZ: 62.5 μs/channel
Sampling refresh mode	Refreshes asynchronously according to the sampling time, and is not required to synchronize with the bus cycle
Output in the stop mode	Output last value, no refresh

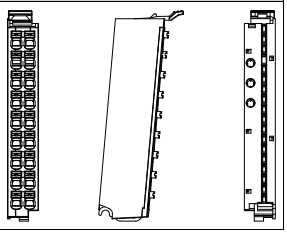
The following table shows the digital range and limit range corresponding to the analog voltage input range and analog current input range.

Analog	Rated Output Range	Digital Value for Rated Range	Output Limit Range	Digital Value for Limit Range
Analog voltage input	-10 V to +10 V	-20000 to +20000 -32000 to +32000 -27648 to +27648	-10.20 V to +10.20 V	-20400 to +20400 -32640 to +32640 -28200 to +28200
	0 V to 10 V	0 to 20000 0 to 32000 0 to 27648	-0.5 V to +10.20 V	-1000 to +20400 -1600 to +32640 -1382 to +28200
	-5 V to +5 V	-20000 to +20000 -32000 to +32000 -27648 to +27648	-5.1 V to +5.10 V	-20400 to +20400 -32640 to +32640 -28200 to +28200
	0 V to 5 V	0 to 20000 0 to 32000 0 to 27648	-0.25 V to +5.1 V	-1000 to +20400 -1600 to +32640 -1382 to +28200
	1 V to 5 V	0 to 20000 0 to 32000 0 to 27648	0.8 V to 5.1 V	-1000 to +20400 -1600 to +32640 -1382 to +28200
Analog current input	-20 mA to +20 mA	-20000 to +20000 -32000 to +32000 -27648 to +27648	-20.40 mA to +20.40 mA	-20400 to +20400 -32640 to +32640 -28200 to +28200
	0 mA to 20 mA	0 to 20000 0 to 32000 0 to 27648	-1 mA to +20.40 mA	-1000 to +20400 -1600 to +32640 -1382 to +28200
	4 mA to 20 mA	0 to 20000 0 to 32000 0 to 27648	3.2 mA to 20.4 mA	-1000 to +20400 -1600 to +32640 -1382 to +28200

7 Environmental Specifications

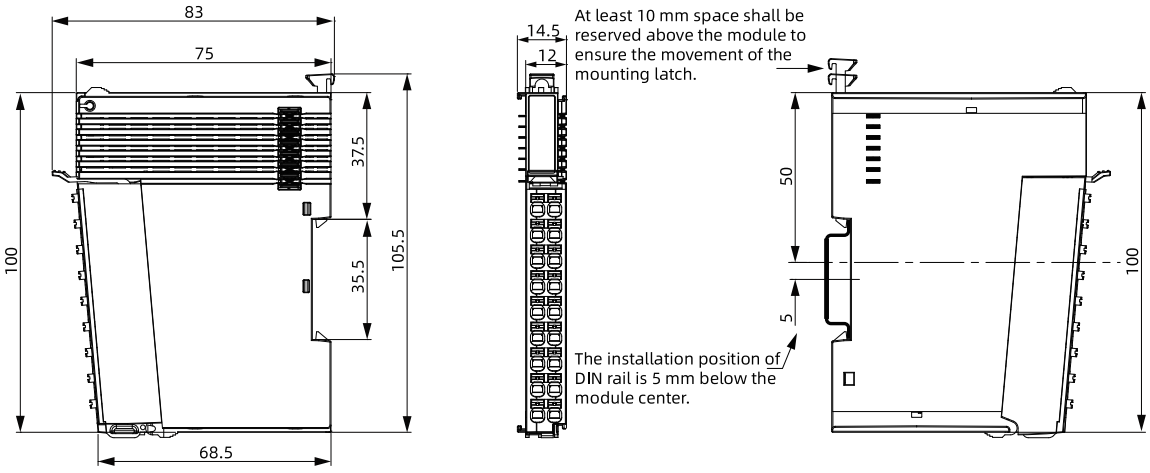
Item	Specification
Installation/Operating environment	Free from conductive dust, conductive fibers, explosive dust, flammable gases, water mist/greasy dirt, corrosive dusts/gases, strong vibration, and repetitive shock
Altitude	≤ 2000 m
Pollution degree	Level 2
Immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)
Overvoltage category	I
EMC immunity level	Zone B, IEC61131-2
Anti-static rating	Contact discharge +/-6 kV and air discharge +/-8 kV
Vibration resistance	• Application scenario: Tested according to IEC60068-2-6. 3.5 mm amplitude at 5 Hz to 8.4 Hz; 1 g acceleration at 8.4 Hz to 200 Hz; 10 cycles per axis. • Transportation scenario: Tested according to IEC60068-2-64, 0.01 g^2/Hz power spectral density at 5 Hz to 100 Hz; 0.001 g2/Hz power spectral density at 200Hz; 1.14 g G_{rms}
Shock resistance	Application/Transportation scenario: Tested according to IEC60068-2-27; 15 g peak acceleration, 11 ms pulse width, 18 shocks in total in X, Y and Z axes
Operating temperature/ humidity	• Temperature: -20°C to +55°C • Humidity: < 95% RH (30°C), without condensation
Storage temperature/ humidity	• Temperature: -20°C to +60°C • Humidity: < 95% RH (30°C), without condensation
Transportation temperature/humidity	• Temperature: -40°C to +70°C • Humidity: < 95% RH (40°C), without condensation

8 List of Spare Parts

Name	Description	Product Code	Diagram
Push-in terminal block (marked as AB)	Pluggable terminal block with spring clamp wiring	15212496	

9 Dimension Drawing

The dimensions (in mm) are shown in the figure below.



Service and Support

Should you encounter a safety accident during the use or operation of the product, or face challenges in operating and maintaining the equipment, which remain unresolved after the relevant documentation is consulted, we provide multiple channels to ensure prompt resolution:

- Channel #1: Contact service@inovance.com.
- Channel #2: Visit https://www.inovance.com/global to access document downloads, after-sales support, spare parts ordering, repair applications, and authenticity verification services.
- Channel #3: Download My Inovance app (https://zshc-eu.inovance.com/download-pc/) where you can access products info and documentation, and query product parameters.

We are committed to providing you with quick and professional technical support, and we look forward to your satisfaction and trust.

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Shenzhen Inovance Technology Co., Ltd.

www.inovance.com

Add.: Inovance Headquarters Tower, High-tech Industrial Park,
Guanlan Street, Longhua New District,
Shenzhen 518000, P.R. China

Tel: (0755) 2979 9595 Fax: (0755) 2961 9897

Suzhou Inovance Technology Co., Ltd.

www.inovance.com

Add.: No. 52, Tian E Dang Road, Wuzhong District, 215104,
Suzhou City, Jiangsu Province, P.R. China

Tel: (0512) 6637 6666 Fax: (0512) 6285 6720