

Preface

■ Introduction

The GL20-0004ER module is a 4-channel digital relay output module applicable to the Easy series products and the GL20 series communication interface modules (such as GL20-RTU-ECT).

This guide describes the mechanical installation, electrical installation, fault diagnosis, module programming examples, and version compatibility of the product.

■ Compliance

The following table lists the certifications, directives, and standards applicable to this product. For certifications actually acquired for the product you purchased, see the certification marks on the product nameplate.

Certification	Directive		Standard
CE	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	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	-	-	UL 61010-1 UL 61010-2-201 CAN/CSA-C22.2 No. 61010-1 CSA-C22.2 No. 61010-2-201
KCC	-	-	-
EAC	-	-	-

Certification	Directive		Standard
UKCA	Safety Regulations	Electrical Equipment (Safety) Regulations 2016	EN 61010-1 EN 61010-2-201 EN 61131-2
	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

Doc Name	Data Code	Description
GL20-RTU-ECT Communication Interface Module User Guide	PS00004985	Describes the installation and wiring details of the product.
GL20-0004ER Channel-Separated Digital Output Module User Guide	PS00012154	Describes the mechanical installation, electrical installation, fault diagnosis, module programming examples, and version compatibility of the product.

Revision History

Date	Version	Description
September 2023	A00	First release

Access to the Guide

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

- Visit www.inovance.com, go to "Support" > "Download", search by keyword, and then download the PDF file.
- Scan the QR code on the product with your smart phone.

- Scan the QR code below to install the Inovance app, and search for the file in the app.



■ Warranty

For faults and damage incurred during normal use in the warranty period, Inovance provides free repair service. (For details of the warranty period, see the purchase order.) A maintenance fee will be charged out of the warranty period.

Even in the warranty period, a maintenance fee will be charged for repair of the following damage:

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

The maintenance fee will be charged according to our latest Price List if not otherwise agreed upon.

For details, see the Product Warranty Card.

General Safety Precautions

■ Safety Disclaimer

1. Read the safety precautions before installing, operating, and maintaining this product.
2. To ensure personal and equipment safety, follow all safety precautions marked on the product and described in the user guide when installing, operating, and maintaining this product.
3. "CAUTION", "WARNING", and "DANGER" messages in the guide are only examples and do not cover all safety precautions.
4. Use this product in an environment that complies with the design specifications. Malfunctions or component damage caused by improper use is not covered by warranty.
5. Inovance shall not be liable for any physical injuries or property loss caused by improper use.

■ Safety Categories and Definitions



"DANGER" indicates that failure to comply with the notice will result in severe physical injuries or even death.



"WARNING" indicates that failure to comply with the notice may result in severe physical injuries or even death.



"CAUTION" indicates that failure to comply with the notice may result in minor or moderate physical injuries or equipment damage. Keep this guide properly for future reference and forward it to the end user.

Control System Design



- Design a safety circuit to ensure that the control system can still work safely upon an external power outage or programmable controller failure.
- The product may catch fire or emit smoke in case of prolonged overcurrent due to overload or short circuit of load. Therefore, configure an external safety device such as a fuse or circuit breaker.



- Design an external emergency stop circuit, protective circuit, forward and reverse rotation interlock circuit, as well as up and down limit interlock circuit to be connected to the programmable controller.
- Design an external protective circuit and a safety mechanism for output signals that may cause major incidents.
- When the programmable controller CPU detects a system exception, it may turn off all outputs. When partial circuit of the controller malfunctions, the controller outputs may become uncontrollable. To ensure proper operation, it is necessary to design an appropriate external control circuit.
- If a programmable controller output unit such as the relay or transistor is damaged, its output cannot be controlled to turn ON or OFF.
- The programmable controller is intended for use in an indoor electrical environment with an overvoltage class of II. The power system must contain a lightning arrester to prevent lightning from causing overvoltage on the power supply input, signal input, and control output terminals of the programmable controller and damaging the equipment.

Installation



- Only allow trained professionals with electrical expertise to install this product.
- Cut off all external power sources before you install or remove this product. Failure to comply may result in electric shock or faults or malfunctions of this product.
- Do not use the programmable controller in places with dirt, oily fume, conductive dust, corrosive gas, flammable gas, high temperature, condensation, wind and rain, vibration, or shock. Electric shock, fire, and improper operation will lead to damage and deterioration of the product.
- The programmable controller is an open-type device to be installed in a control cabinet with a door lock (housing IP rating higher than IP20). Only allow trained operators with electrical expertise to open the cabinet.



- During installation, prevent metal chippings and cable ends from falling into the vent of the product. Failure to comply may result in fire, faults, or malfunctions.
- After installation, ensure that no unwanted objects exist on the ventilation surface. Failure to comply may result in poor heat dissipation, fire, faults, or malfunctions.
- During installation, tightly connect the product and its connectors and firmly lock its hooks. Improper module installation may lead to malfunctions, faults, and detachment.

Wiring



DANGER

- Only allow trained professionals with electrical expertise to conduct wiring for this product.
- Cut off all external power sources before wiring. Failure to comply may result in electric shock or equipment faults or malfunctions.
- Properly insulate the cable terminals and ensure a proper insulation distance between the cables connected to the terminal block. Failure to comply will result in electric shock or equipment damage.



CAUTION

- Turn off the main power supply before connecting it to the product. Failure to comply may result in electric shock.
- Select a proper power supply according to the power supply specifications of the product in the "Technical Specifications" section. If the selected power supply is beyond the required range, the product may be damaged. Regularly check whether the DC power provided by the switching-mode power supply unit is stable.

Operation and Maintenance



CAUTION

- Only allow trained professionals with electrical expertise to operate and maintain this product.
- Do not touch terminals when the power is on. Failure to comply may result in electric shock or malfunctions.
- Cut off all external power sources before you clean the product. Failure to comply may result in electric shock.
- Cut off all external power sources before you install or remove the product or communication cables. Failure to comply may result in electric shock or malfunctions.

Safety suggestions

- In places where operators have direct contact with mechanical parts, such as loading and unloading places and areas with automatic machinery operation, carefully configure an on-site manual operating device or alternative means that works independently of the programmable controller and can start or stop the automatic operation.
- If programs need to be modified when the system is running, apply a lock or take other necessary measures to ensure that only authorized personnel can perform such modification.

Disposal



- Dispose of this product as industrial wastes. Dispose of the battery separately in accordance with local laws and regulations.
- Recycle retired equipment in accordance with waste disposal standards of the industry to avoid environmental pollution.

1 Product Information

1.1 Naming Rules and Nameplate Information

GL 20 -00 04 E R

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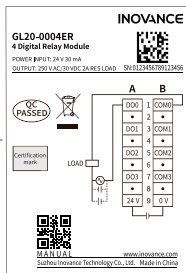
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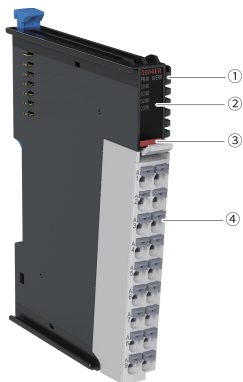
① Product Information GL: Inovance general local module	③ I/O Points 00: 0-point input	⑤ Module Type E: Logic I/O expansion module
② Series 20: The 20 series module	④ I/O Points 04: 4-point output	⑥ Output Type R: Relay output









Based on the naming rules and nameplate information described above, the ordering data for this product is:

Model	Description	Product Code	Applicable Device
GL20-0004ER	GL20 series 4-point relay output general-purpose module	01440485	GL20 series communication interface modules, Easy series, and other series

1.2 Components



No.	Interface	Function			
①	Signal indicator	PR (POWER +RUN)	Power/Run indicator	Yellow-green	<ul style="list-style-type: none"> ● Steady ON: The module is running properly. ● Quick blinking: Module addressing succeeds. ● Slow blinking: The module is powered on, but addressing fails. ● OFF: The module is not powered on, or a module fault occurs.
		ERR	Error indication	Red	The module is faulty.
②	I/O signal	00 to 03	I/O signal indication	Yellow-green	<ul style="list-style-type: none"> ● Steady ON: The output is active. ● Steady OFF: The output is inactive.
③	Color code		Red: Digital output		Orange: Analog output
			Gray: Digital input		Green: Analog input
			White: Communication		Blue: Other modules
④	User terminal	For details, see "3.2 Terminal Assignment" on page 24.			

Note

- Flashing quickly: on for 200 ms followed by off for 200 ms.
- Flashing slowly: on for 200 ms followed by off for 1000 ms.

1.3 Technical Specifications

■ General specifications

Item	Specifications
IP rating	IP20
Dimensions (W x H x D)	12 mm x 100 mm x 75 mm
Weight	Approx. 65 g

■ Power supply specifications

Item	Specifications
Rated voltage of bus input power	5 VDC (4.75 VDC to 5.25 VDC)
Rated current of bus input power	85 mA (typical value at 5 V)
Rated voltage of terminal input power	24 VDC (20.4 VDC to 28.8 VDC)
Rated current of terminal input power	30 mA (typical value at 24 V)
Rated voltage of terminal output power	None
Rated current of terminal output power	None
Hot swapping	Not supported

■ Output specifications

Item	Specifications
Output type	Digital output; relay output
Output mode	Dry contact
Output channels	4
Output voltage class	250 VAC/30 VDC
Output load (resistive load)	2 A/point; 8 A/module
Output load (inductive load)	1 A/point; 4 A/module

Item	Specifications
Output load (lamp load)	30 W/point; 120 W/module (the inrush current when a lamp load is connected to a channel must be less than the rated current when a resistive load is connected)
Hardware response time (ON/OFF)	Approx. 15 ms
Minimum load	5 VDC, 5 mA
Switching frequency	No more than 6 cycles per minute
Mechanical endurance	20 million cycles
Electrical endurance	100 thousand cycles
Isolation	Yes. The backplate bus is isolated from the interface and interface channels are isolated from each other.
Output action display	The output indicator lights up (controlled by software) when the output is in drive state.
Output derating	Derated to 50% at the ambient temperature of 55°C (total current when all the output channels are ON must not exceed 4 A). Alternatively, when all the output channels are ON, lower the maximum allowed temperature by 10°C.
Protection	None

■ Software specifications

Item	Specifications
Output state in case of fault reaction	Zeroing, retaining current value, or output based on preset value
Preset output value in case of fault reaction	0 or 1
Output port exception detection and indication	None
Output channel logic level configuration	Not supported
Independent channel enable configuration	Not supported
Diagnostic reporting configuration	Not supported

Item	Specifications
Stop mode	Output based on fault reaction and preset value and no longer updated
I/O mapping	Three types of IO mapping: bit-wise access, byte-wise access, and word-wise access

Note

Common fault reaction scenarios include:

- Background start/stop;
- Unplugging the network cable or manually switching states causing the GL20 communication interface module bus to be in a non-operational communication state; and
- Local bus stoppage.

1.4 Environmental Specifications

Item	Specification
Operating environment	No corrosive and flammable gas and no excessive conductive dust
Altitude	≤2000 m
Pollution degree	2 or less
Noise immunity	2 kV on power supply line (Conforms to IEC 61000-4-4)
Overvoltage category	I
EMC immunity level	Zone B, IEC61131-2
Vibration resistance	IEC 60068-2-6 5 Hz to 8.4 Hz, 3.5 mm, 8.4 Hz to 150 Hz, 1 g, 10 times each in X, Y and Z directions
Shock resistance	IEC 60068-2-27 150 m/s ² , 11 ms, 3 times each in ±X, ±Y and ±Z directions, 18 times in total
Storage temperature/humidity	<ul style="list-style-type: none"> • Storage temperature: -40°C to 70°C • Relative humidity: <90% RH, non-condensing

Item		Specification
Operating temperature/humidity		<p>Operating temperature: -20°C to 55°C</p> <p>Relative humidity: 10% to 90% RH, non-condensing</p> <p>Note: Install a fan or air conditioner in the direction of the ventilation holes when the operating temperature is greater than the maximum allowable temperature.</p>
Installation position and limit	Installation Position	For details, see "2.1 Installation Requirements" on page 16

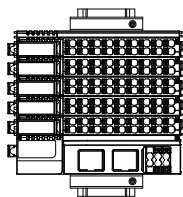
Item	Specification
<p>Installation position and limit</p> <p>Limits</p>	<p>When installed horizontally:</p> <p> 4 channels (channel 0 - channel 3) 3 channels (channel 0 - channel 2) 2 channels (channel 0 - channel 1) </p> <p>Load (Ω)</p> <p>Operating temperature ($^{\circ}\text{C}$)</p>
<p>Installation position and limit</p> <p>Limits</p>	<p>When installed non-horizontally:</p> <p> 4 channels (channel 0 - channel 3) 3 channels (channel 0 - channel 2) 2 channels (channel 0 - channel 1) </p> <p>Load (Ω)</p> <p>Operating temperature ($^{\circ}\text{C}$)</p>

Note

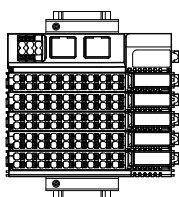
If there is a high-temperature heat source (heater, transformer, large resistor, etc.) in vicinity of the product, keep the product away from the heat source by at least 100 mm.

■ Other mounting options

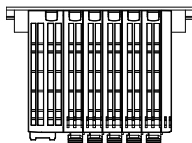
Other mounting options require the same clearance as the optimal mounting option and are shown in the following figure.



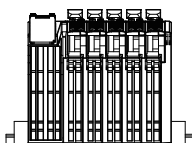
Vertical direction 1



Vertical direction 2



Cabinet top



Cabinet bottom





In case of vertical installation:

- If the module is mounted to the PLC, make sure the PLC is arranged below all I/O modules (see vertical direction 1). The number of modules must not exceed 6, and the type of modules is not limited.
 - Hold the cables with a cable duct to prevent the weight of cables being applied to the lower end plate, which may result loose of the product from the DIN rail.
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2.2 Installation Precautions

- Before installing or removing the module, ensure that the module is powered off.
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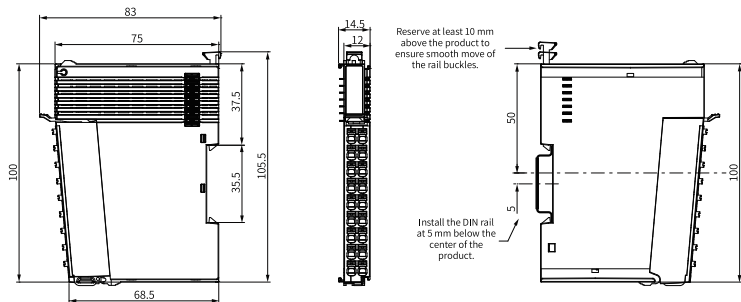
Do not hot swap the modules. Otherwise, the modules may be damaged by overcurrent or overvoltage, and the communication interface module or PLC may be subject to restart, user data loss or corruption.

- Do not let the casing or terminals of the module drop or be impacted to prevent module damage.

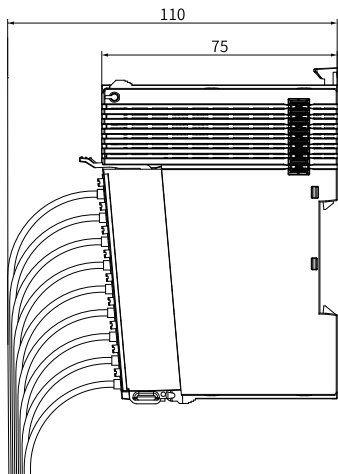
2.3 Installation Dimensions

■ Module

Installation dimensions are shown below in millimeters (mm).

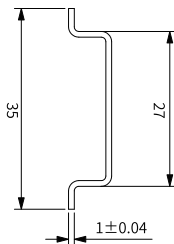


■ Connecting cables



2.4 Installation Method

The module is installed on a DIN rail, which must comply with the IEC 60715 standard (35 mm wide, 1 mm thick). The rail dimensions are shown in the following figure, in millimeters (mm).

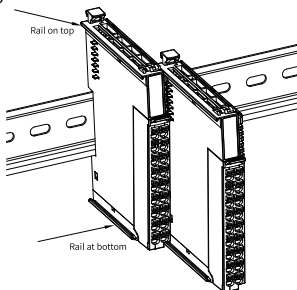


Caution

If the module is not installed on the recommended DIN rail (especially when the DIN rail thickness is not 1.0 mm), DIN rail buckles may not be locked. In this case, the module cannot be installed in place and will fail to work properly.

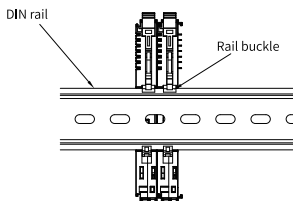
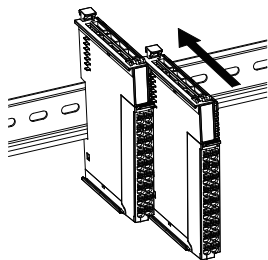
■ Installing the module on another module

Install the I/O module by sliding it on the top and bottom rails of another module, as shown in the following figure.

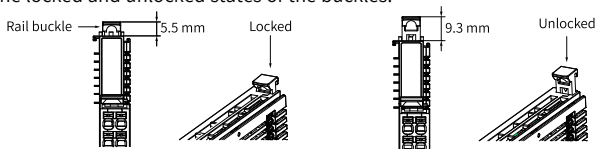


■ Installing the module on the DIN rail

1. Align the module with the DIN rail and push the module in the direction of the arrow until it clicks into place with a distinct locking sound, as shown in the following figure.



2. Ensure that the DIN rail buckles of the module are locked. The following figures show the locked and unlocked states of the buckles.



- The buckles are locked when pressed down.
- The buckles are unlocked when lifted up.

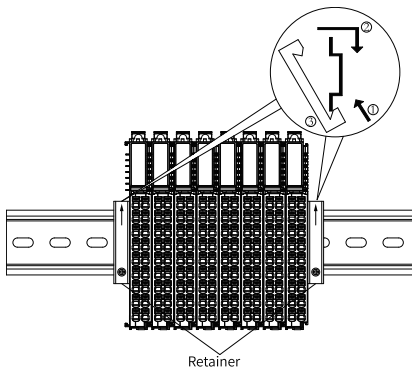
Pressing the buckles locks them.



When the module is not installed on the DIN rail, keep the rail buckles in locked state. If the rail buckles remain in unlocked state for a long period of time, they will be invalidated.

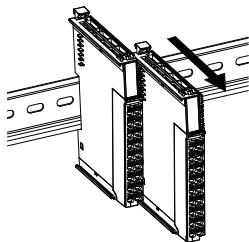
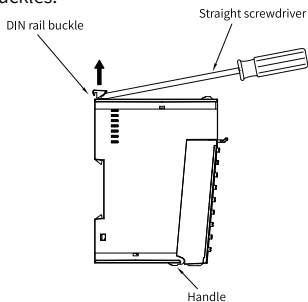
3. Install a DIN rail retainer on each side of the main unit or module, as shown in the following figure.

When you install a rail retainer, hook the bottom of the retainer to the bottom of the rail, rotate the retainer to make its top hook the top of the rail, and then secure the retainer in place with a screw.



■ Removal

Use a straight screwdriver or similar tool to pry up the rail buckles, pull the module straight out by holding the handle (raised part). After removal, press down the top of the buckles.



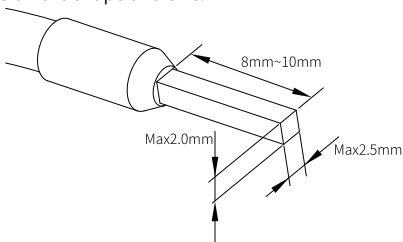
3 Electrical Installation

3.1 Cable Selection

The cable lugs and cable sizes in the following table are for reference only. Select proper cables based on actual situations.

Material Name	Applicable Cable Size		KST		Suzhou Yuanli	
	mm ²	AWG	Model	Crimping Tool	Model	Crimping Tool
Tubular lug	0.3	22	E0308	KST2000L	0308	YAC-5
	0.5	20	E0508		0508	
	0.75	18	E7508		7508	
	1.0	18	E1008		1008	
	1.5	16	E1508		1508	

If other tubular lugs are used, crimp them to twisted cables. The following figure shows requirements on the shape and size.



3.2 Terminal Assignment

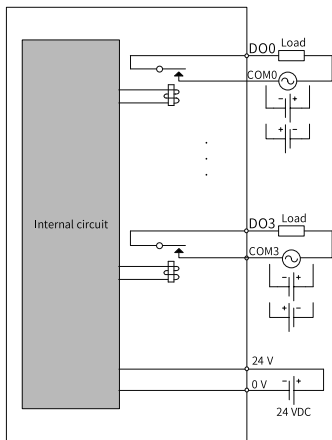


Left Signal	Left Terminal	Right Terminal	Right Signal
DO0	A1	B1	COM0
•	A2	B2	•
DO1	A3	B3	COM1
•	A4	B4	•
DO2	A5	B5	COM2
•	A6	B6	•
DO3	A7	B7	COM3
•	A8	B8	•
24 V	A9	B9	0 V

The following table shows the correspondence between terminal signals and signal indicators.

Terminal Signal	Signal Indicator
DO0	00
DO1	01
DO2	02
DO3	03

3.3 Terminal Wiring





Caution

- The inrush current when a lamp load is connected to a channel must be less than the rated current when a resistive load is connected.
 - Inductive loads generate a large reverse electromotive force between contacts when stopping, leading to arcing discharge. Under a given current consumption, small power means great arc energy. Therefore, consider using an arc control device.
 - For inductive loads:
 - In a DC circuit, add a freewheel diode. The forward current of the freewheel diode must be greater than the load current. The reverse withstand voltage must be 5 to 10 times greater than the load voltage.
 - In an AC circuit, add an RC snubber circuit, where R is around $100\ \Omega$ to $200\ \Omega$, and C is approximately $0.1\ \mu\text{F}$.
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4 Fault Diagnosis

When the ERR indicator on the module lights up, it indicates that the module has a fault. At this point, the module reports a fault code, which can be obtained from the diagnosis data object dictionary values in the "CoE Online" interface, as shown in the following figure. The object dictionary definitions are listed in the table below.

The screenshot shows the CoE Online interface with the following elements:

- Top navigation: Device, Network Configuration, ETHERCAT, GL20_RTU_ECT32 x, GVL.
- Left sidebar: General, Process Data(PDO Setting), Startup parameters(SDO Setting), Online, CoE Online, Device Diagnosis, EtherCAT I/O Mapping, EtherCAT IEC Objects, Status, Information.
- Right pane: Object Dictionary table.

Index/Subindex	Name	Flags	Type	Value
16#1000:16#00	Device type	RO	UDINT	
16#1001:16#00	Error Register	RO	USINT	
16#1008:16#00	Device Name	RO	STRING(15)	
16#100A:16#00	Software version	RO	STRING(13)	
16#1018:16#00	Identity	RO	USINT	
16#1C00:16#00	Sync manager type	RO	USINT	
16#1C12:16#00	RxPDO assign	RO	USINT	
16#1C13:16#00	TxPDO assign	RO	USINT	
16#1C32:16#00	SM output parameter	RO	USINT	
16#1C33:16#00	SM input parameter	RO	USINT	
16#3010:16#00	Port 0 error counter	RO	USINT	
16#3011:16#00	Port 1 error counter	RO	USINT	
16#3012:16#00	ESC error counter	RO	USINT	
16#3016:16#00	Station address	RO	USINT	
16#3020:16#00	Fpga soft version	RO	UDINT	
16#3021:16#00	Module software version	RO	USINT	
16#5000:16#00	Disable Slot Control	RW	USINT	
16#5001:16#00	Disable Function Control	RW	USINT	
16#7000:16#00	0004ER output	RO	USINT	
16#8000:16#00	0004ER module configure stopmode parameters	RW	USINT	
16#8001:16#00	0004ER module configure stopvalue parameters	RW	USINT	
16#A000:16#00	0004ER Diagnosis information	RO	USINT	
16#A01	0004ER Module Diagnosis information	RO	UDINT	
16#A02	0004ER CH0 Diagnosis information	RO	UDINT	
16#F000:16#00	Modular device profile	RO	USINT	
16#F030:16#00	Configured Module Ident List	RO	USINT	
16#F050:16#00	Detected Module Ident List	RO	USINT	
16#F100:16#00	Device Status	RO	USINT	
16#F110:16#00	Module Error Flag	RO	USINT	
16#F120:16#00	LBus Count	RO	USINT	
16#F800:16#00	Device configuration data	RO	USINT	
16#FB00:16#00	Control word	RW	UDINT	

- Process data
 - Mapping data

For a module in slot n ($n = 1$ to 32), the index is $0x1600+0x08*n$.

Index	0x1600+0x08*n: 0004ER RPDO bit mapping				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	8
1	Sub-index 001	UDINT	RO	No	0x7xx00101
2	Sub-index 002	UDINT	RO	No	0x7xx00201
3	Sub-index 003	UDINT	RO	No	0x7xx00301
4	Sub-index 004	UDINT	RO	No	0x7xx00401
5	Sub-index 005	UDINT	Invalid	No	0x7xx00501
6	Sub-index 006	UDINT		No	0x7xx00601
7	Sub-index 007	UDINT		No	0x7xx00701
8	Sub-index 008	UDINT		No	0x7xx00801

For a module in slot n (n = 1 to 32), the index is 0x1601+0x08*n.

Index	0x1601+0x08*n: 0004ER RPDO byte mapping				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	1
1	Sub-index 001	UDINT	RO	No	0x7xx00108

For a module in slot n (n = 1 to 32), the index is 0x1602+0x08*n.

Index	0x1602+0x08*n: 0016XX RPDO word mapping				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	1
1	Sub-index 001	UDINT	RO	No	0x7xx00110

- Process data

For a module in slot n ($n = 1$ to 32), the index is $0x7000+0x40*n$.

Index	0x7000+0x40*n: 0004ER output				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	1
1	Digital output of channel bits 0 to 8	USINT	RW	Yes	0

- Configuration data

For a module in slot n ($n = 1$ to 32), the index is $0x8000+0x40*n$.

Index	0x8000+0x40*n: 0004ER stop mode				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	1
1	Channel 0 digital output in stop mode	USINT	RW	No	0x0F

Sub-index 1: Channel 0 digital output in stop mode

<ul style="list-style-type: none"> ● Bits 0 to 3 ● Bits 4 to 7: Reserved 	<p>Output mode during stop, with each bit corresponding to one output port</p> <p>0: Maintain current output state</p> <p>1: Output according to preset value of object dictionary value 8001</p>
--	---

For a module in slot n ($n = 1$ to 32), the index is $0x8001+0x40*n$.

Index	0x8001+0x40*n: 0004ER stop mode output value				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	Sub-index 000	USINT	RO	No	1
1	Channel 0 digital output value in stop mode	USINT	RW	No	0

Sub-index 1: Channel 0 digital output value in stop mode

<ul style="list-style-type: none"> • Bits 0 to 3 • Bits 4 to 7: Reserved 	Preset output value during stop, with each bit corresponding to one output port 0: Output 0 1: Output 1
--	---

- Diagnosis data

For a module in slot n ($n = 1$ to 32), the index is $0xA000+0x40*n$.

Index	0xA000+0x40*n: 0004ER fault code				
Sub-index	Name	Data Type	Access Mode	Mapping	Default
0	0004ER fault code	USINT	RO	No	2
1	0004ER module fault code	UINT	RO	No	0
2	0004ER channel 0 fault code	UINT	RO	No	0

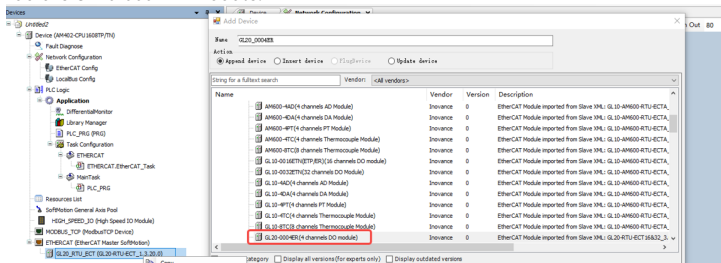
Module fault codes

Fault Code	Fault	Solution
0x5003	External 24 V power outage	Check the isolated power supply of the module.

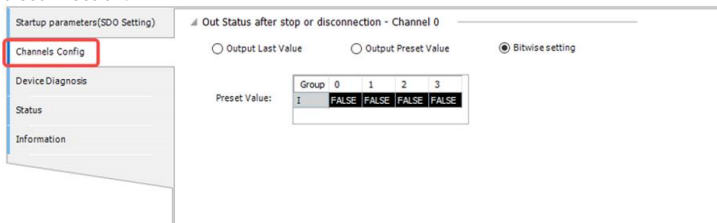
5 Module Programming Examples

This section describes how to copy the variable values of the GL20-0004ER module to output variables to illustrate how to use the module, taking the AM600 series as the control master.

1. Add the GL20-0004ER module.



2. Double-click the module to set its output status during stop or network disconnection.



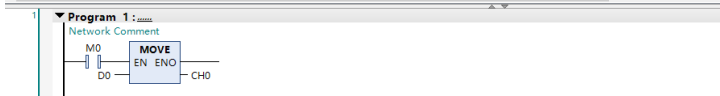
3. Add a custom variable CH0 in the variables section.

	Scope	Name	Address	Data type	Initial...	Persistent	Constant	Network Publish	Comment	Attributes
1	VAR	CH0		USINT		<input type="checkbox"/>	<input type="checkbox"/>	Default		

4. Map the variable CH0 defined in the program to a channel of the configured module to complete the variable mapping.

Variable	Mapping	Channel	Address	Type	Default Value	Unit	Description
* * * * *		Device control	%QW3	UINT			Device control
* * * * *		GL20_0004ER Digital output CH0-8bit	%Q08	UINT			GL20_0004ER Digital output CH0-8bit
* * * * *		Libus status	%IW3	UINT			Libus status
* * * * *		Fault ID	%IW4	UINT			Fault ID

- Use the LD programming language as shown in the following figure to define variable D0.



- After successful compilation, download the project and run it.

6 Appendix: Version Compatibility

Explanation

For module firmware and communication interface module firmware, contact Inovance technical personnel to obtain. For XML files and InoProShop software, you can obtain from the "Software and Debugging Tools" section on the GL20 series product page (<https://www.inovance.com>). The version compatibility is shown in the following table.

Module Firmware Version	Communication Interface Module Firmware Version	XML/GSD File Version	InoProShop Version
Logic software: 0.1.4.0 or later	GL20-RTU-ECT (logic software): 2.4.13.0 or later	GL20-RTU-ECT: 1.3.16.0 or later	V1.7.3 SP2 or later