

2501EN V2.0.3

IC-GRID XSeries GX-CL130 Module User Manual





All Rights Reserved



No. 19, Wuquan 2nd Rd., Wugu Dist., New Taipei City 248

Tel: 886-2-8069-9000 Fax: 886-2-2290-1707 E-mail: service@daudin.co Web: https://www.daudin.co/tw

DAUDIN has taken all possible measures to ensure the accuracy and completeness of this document. However, as errors may still be inevitable, we always appreciate any information or suggestions for improvements and document corrections. Email: youdo.yu@daudin.co

We kindly ask for your assistance in pointing out any inaccuracies in the software and hardware terminology. The trademarks used and/or mentioned in this manual are protected by trademark or patent law.







1. THIS DEVICE IS FOR INDOOR USE ONLY, DON'T PUT OR USE IT IN HIGH TEMPERATURE AND HIGH MOISTURE ENVIRONMENT.

CET EQUIPEMENT EST DESTINE A UN USAGE INTERIEUR UNIQUEMENT NE PAS STOCKER OU UTILISER DANS UN ENVIRONNEMENT A HAUTE TEMPERATURE ET HAUTE HUMIDITE.

2. AVOID FALLING AND BUMPING OTHERWISE THE ELECTRICAL COMPONENTS WILL BE DAMAGED.

ÉVITEZ DE TOMBER ET DE VOUS ÉCRASER, SINON LES COMPOSANTS ÉLECTRIQUES SERONT ENDOMMAGÉS

3. DON'T TRY TO DISASSEMBLE OR OPEN THE COVER UNDER ANY CIRCUMSTANCE IN ORDER TO AVOID DANGER.

NE TENTEZ JAMAIS DE DEBALLER OU D'OUVRIR LE COUVERCLE POUR EVITER TOUT DANGER.

4. IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.

SI L'APPAREIL N'EST PAS UTILISE DE LA MANIERE INDIQUEE PAR LE FABRICANT, LA PROTECTION FOURNIE PAR L'APPAREIL PEUT ETRE ALTEREE.

5. THE INSTALLATION THAT THE SAFETY OF ANY SYSTEM INCORPORATING THE EQUIPMENT IS THE RESPONSIBILITY OF THE ASSEMBLER OF THE SYSTEM.

L'INSTALLATION DE TOUT SYSTÈME INTÉGRANT CET ÉQUIPEMENT EST LA RESPONSABILITÉ DU CONSTRUCTEUR DU SYSTÈME.

6. USE WITH COPPER CONDUCTORS ONLY. INPUT WIRING: MINIMUM 28 AWG, 85°C, OUTPUT WIRING: MINIMUM 28 AWG, 85°C

DESTINÉ À ÊTRE UTILISÉ AVEC DES CONDUCTEURS EN CUIVRE SEULEMENT. CABLAGE D'ENTREE: MINIMUM 28 AWG, 85 ° C. CABLAGE DE SORTIE: MINIMUM 28 AWG, 85 ° C.

7. FOR USE IN A CONTROLLED ENVIRONMENT. REFER TO MANUAL FOR ENVIRONMENTAL CONDITIONS.

POUR UN ENVIRONNEMENT CONTROLE. REPORTEZ-VOUS AU MANUEL DES CONDITIONS ENVIRONNEMENTALES.

8. DISCONNECT ALL SOURCES OF SUPPLY BEFORE SERVICING.

COUPER TOUTES LES SOURCES D'ALIMENTATION AVANT DE FAIRE L'ENTRETIEN ET LES RÉPARATIONS.9. PROPER VENTILATION IS REQUIRED TO REDUCE THE RISK OF HAZARDOUS OR EXPLOSIVE GAS BUILDUP DURING INDOOR CHARGING. SEE OWNERS MANUAL.



UNE VENTILATION ADÉQUATE EST NÉCESSAIRE AFIN DE RÉDUIRE LES RISQUES D'ACCUMULATION DE GAZ DANGEREUX OU EXPLOSIFS DURANT LA RECHARGE À L'INTÉRIEUR. VOIR LE MANUEL D'ENTRETIEN.

10. PLEASE BE SURE TO USE CERTIFIED POWER SUPPLY WITH SELV OUTPUT OR CERTIFIED POWER SUPPLY PROVIDING DOUBLE INSULATION EVALUATED BY UL60950-1, UL 62368-1, OR UL61010-1 AND UL61010-2-201 STANDARDS.

VEUILLEZ VOUS ASSURER D'UTILISER UNE ALIMENTATION CERTIFIÉE AVEC SORTIE SELV OU UNE ALIMENTATION CERTIFIÉE OFFRANT UNE DOUBLE ISOLATION ÉVALUÉE PAR LES NORMES UL60950-1 OU UL 62368-1 OU UL61010-1 ET UL61010-2-201. DAUDIN CO., LTD.

Table of Contents

1. Notes on This Document						
	1.1	Validity of This Document	. 6			
	1.2	Copyright	. 6			
	1.3	Property rights	. 6			
	1.4	Symbols	7			
	1.5	Digital Representation	. 8			
2.	Import	ant Notes	. 9			
	2.1	Legal Basis	. 9			
	2.2	Safety Recommendations (Precautions)	.11			
	2.3	Special Usage Conditions for Ethernet Devices	14			
3.	System	Description	15			
	3.1	Labels	16			
	3.2	Storage, Assembly, and Transportation	16			
	3.3	Assembly Guidelines/Standards	16			
	3.4	Power Supply	17			
4.	Introdu	action	18			
	4.1	Coupler Product Interfaces and Functions	18			
	4.2	Coupler Indicator Light Overview	20			
	4.3	IO Module Panel Overview	21			
	4.4	Module Specifications	39			
	4.5	Module Dimensions	43			
5.	Comm	on Module List	45			
6.	Installa	ation and Removal	46			
	6.1	Installation.	46			
	6.2	Removal	47			
7.	Connecting Devices					
	7.1 Internal Communication Method					
	7.2	Field Power Supply	48			
8.	Modul	e Wiring Instructions	49			
	8.1	Coupler Module Wiring Diagram	49			
	8.2	Digital IO Module Wiring Diagram	50			
	8.3	Analog IO Module Wiring Diagram	62			
9.	Param	eter Setting and Configuration Instructions	70			
	9.1	Product Assembly Configuration	70			
	9.2	Coupler Parameter Explanation	71			
	9.3	Factory Defaults	73			
	9.4	Error Code Lookup	74			
	9.5	Analog Module A/D and D/A Conversion Parameters and Settings	76			
10.	i-De	signer Operating Instructions	85			
	10.1	Installation	85			
	10.2	UI Screen Description	87			
	10.3	i-Designer Information Verification	92			
	10.4	Language Settings	93			
	10.5	COM Port Connection Settings	94			
	10.6	Connection Setting Instructions	96			



1. Notes on This Document

Note.

Please retain this document!

This document is part of the product. Please keep this document for the entire lifespan of the product. Pass the document to any subsequent users.

Please also ensure that any supplements or updates to this document are included if necessary.

1.1 Validity of This Document

This document applies only to the "GX Series PROFINET®."

The product "GX Series EtherNet/IPTM" should only be installed and operated according to the instructions in this manual and system specifications. Applicable to iO-GRID System GX Series.

1.2 Copyright

This manual, including all diagrams and illustrations, is protected by copyright. Any third party using this manual in violation of copyright regulations is prohibited. Reproduction, translation, archiving (e.g., photocopying), or any modifications must be authorized in writing by DAUDIN CO., LTD.

Failure to comply may result in claims for damages.

1.3 Property rights

Third-party trademarks are used in this documentation. This section contains the trademarks used. The "®" and "TM" symbols are omitted hereinafter.

- EtherCAT® is a registered trademark and patented technology of Beckhoff Automation GmbH.
- EtherNet/IPTM is a registered trademark of Open DeviceNet Vendor Association, Inc (ODVA).
- Modbus® is a registered trademark of Schneider Electric, licensed to the Modbus Organization, Inc.
- PROFINET® is a registered trademark of Siemens AG.



1.4 Symbols



Personal Injury!

Indicates a high-risk, imminent danger situation that could result in death or severe injury if not avoided.



Electric Shock Hazard!

Indicates a high-risk, imminent danger situation that could result in death or severe injury if not avoided.



Personal Injury!

Indicates a moderate-risk, potential hazard situation that could result in death or severe injury if not avoided.



Personal Injury!

Indicates a low-risk, potential hazard situation that could result in minor or moderate injury if not avoided.

NOTICE

Property Damage!

Indicates a potential hazardous situation that could result in property damage if not avoided.

NOTICE

Electrostatic Discharge (ESD) may cause property damage!

Indicates a potential hazardous situation that could result in property damage if not avoided.



1.5 Digital Representation Table 1: Number Representation

Number Code	Example	Comment
Decimal	150	Decimal Notation
Hexadecimal	0x96	Hexadecimal Notation
Binary	"150"	Binary Notation
	1001 0110	

=



2. Important Notes

This section provides a general summary of the key safety requirements and comments mentioned in each individual section. To ensure your health and prevent damage to the equipment, it is crucial to read and follow the safety guidelines carefully.

2.1 Legal Basis

2.1.1 Subject to Change Without Notice

DAUDIN CO., LTD. reserves the right to make any changes or modifications.

DAUDIN CO., LTD. holds all rights and patents granted through patent or utility model protections.

While third-party products are mentioned, their patents are not referenced. Therefore, the existence of such rights cannot be excluded.

2.1.2 Applicable Personnel

All operations on the iO-GRID System GX Series equipment must be performed by qualified electrical experts with sufficient automation knowledge.

These experts must be familiar with the current specifications, guidelines, and automation environment of the equipment.

Any changes to the couplers or controllers must be carried out by qualified personnel with adequate PLC programming skills.

2.1.3 Basic Requirements for Using the iO-GRID System GX Series

The modular iO-GRID system's field bus coupler, controller, and I/O modules in the GX series receive both digital and analog signals from sensors and transmit them to actuators or higher-level control systems. With the controller, these signals can also be processed (or pre-processed).

This product meets IP20 protection standards and is designed for use in dry indoor environments. It is equipped with protective features to prevent finger injuries, with openings no larger than 12.5 mm in diameter. However, protection against water damage is not guaranteed.

This product is classified as open equipment. It should only be installed in enclosures (such as tool-fixed enclosures or operation rooms) that meet the requirements outlined in the "Safety Recommendations" section. The specified safety measures (precautions) must be followed. The product can be used in environments where dust, corrosive fumes, gases, or ionizing radiation may be present, provided no additional protective measures are required. It is suitable for installation in automated systems.

If the product meets emission limits (interference emissions), it is permitted under EN 61000-6-3.

In household applications, the product can be operated without further measures as long as it complies with the emission limits (interference emissions) permitted under EN 61000-6-3. Please follow the installation guidelines!

DAUDIN CO., LTD.

2.1.4 Technical Specifications for Device Use

The equipment is shipped with hardware and software configurations designed to meet specific application requirements.

These modules do not include user-serviceable or repairable parts.

The following actions will void all warranties and liability:

DAUDIN CO., LTD.

- Performing unauthorized repairs
- Making hardware or software modifications not covered in this manual
- Misusing components

For further details, refer to the contract agreement. If you need to request modifications or new hardware and software configurations, please contact us directly.



2.1.5 Packaging

The packaging is made of reusable materials.

Packaging regulations may differ by country, following directives PPWD 94/62/EU and 2004/12/EU.

Proper disposal of packaging materials protects the environment and promotes sustainable resource use.

- Adhere to national and local regulations for packaging disposal.
- Recycle, reuse, and recover packaging materials wherever possible.

Improper disposal can harm the environment and waste valuable resources.



2.2 Safety Recommendations (Precautions)

To install and operate the equipment on your system, follow these safety precautions:



Do not operate the equipment while powered on!

Before performing any operation, switch off all power supplies to the equipment for installation, repair, or maintenance.



Install the equipment only in a suitable enclosure!

The device is an open system and must be housed in a proper enclosure that meets the following requirements:

- Ensures maximum protection. Does not exceed the permissible pollution level.
- Provides adequate touch protection.
- Prevents fire from spreading outside the enclosure.
- Offers sufficient protection against UV radiation.
- Ensures mechanical stability.
- Restricts access to authorized personnel only and can only be opened using tools.



Ensure disconnection and overcurrent protection!

This equipment is designed for installation in automation technology systems. It does not integrate disconnection protection. The connected system must be fuse-protected. Proper disconnection and overcurrent protection should be provided on the system side.



Ensure standard connections!

Minimize risks of personal injury and system failures by installing data and power lines according to standards, ensuring correct terminal assignment.

Adhere to applicable EMC directives for your device.





All field signals and power connections to the fieldbus coupler/controller must be powered by SELV/PELV supplies.



Insufficient conductor cross-sections can cause temperature increases.

To avoid heat risks, use conductors with cross-sections that meet the following requirements: Maximum required load current. The specified technical data for the conductor cross-section applies only to the mechanical connection capability at the clamping points.



Avoid touching hot surfaces!

The enclosure surface may become hot during operation. If the equipment operates in high-temperature environments, allow it to cool before handling.

NOTICE

Do not connect to the internet!

Use devices equipped with Ethernet or RJ-45 connectors only within a LAN. Never connect these devices to the internet.

NOTICE

Ensure proper contact with the DIN rail!

There must be appropriate electrical contact between the DIN rail and the device to maintain the device's EMC properties and functionality.

NOTICE

Replace defective or damaged equipment!

Replace any defective or damaged equipment/modules (e.g., in cases of deformation).

NOTICE

Protect components from corrosive and insulating materials!

Modules are not resistant to materials such as aerosols, silicone, or triglycerides. If such materials are unavoidable, install the modules in corrosion-resistant enclosures. Clean tools and materials are essential for handling the equipment/modules.



NOTICE

Clean only with approved tools and materials!

Use isopropyl alcohol to clean the enclosure and contaminated contacts.

NOTICE

Do not use any contact sprays!

Do not use contact sprays or any other sprays that might damage or contaminate the contact areas.

NOTICE

Avoid reversed polarity connections!

Incorrect polarity of data and power lines may damage the equipment.

NOTICE

Prevent electrostatic discharge (ESD)!

These devices contain electronic components that are sensitive to static discharge.

Follow safety precautions as per DIN EN 61340-5-1/-3 to prevent ESD.

Ensure proper grounding of the environment, personnel, workspace, and packaging when handling the equipment.

DAUDIN DAUDIN CO., LTD.

2.3 Special Usage Conditions for Ethernet Devices

Unless stated otherwise, Ethernet devices are designed for use within local networks. When using Ethernet devices with your computer, please follow these guidelines:

- Avoid direct connections to open networks like the Internet or office networks for control components and control networks. Use a firewall to protect control components and networks.
- Turn off unnecessary ports and services in control components (e.g., PLC and CODESYS) to reduce the risk of cyber attacks and improve security. Only enable ports and services when needed for debugging or configuration.
- Limit physical and electronic access to all automation components to authorized personnel only.
- Change default passwords before first use! Doing so will reduce the following risk: Unauthorized access to your system.
- Regularly update your passwords! Doing so will reduce the following risk: Unauthorized access to your system.
- If remote access to control components and networks is necessary, always use a VPN to ensure secure communication.
- Conduct regular threat analyses. Performing regular threat assessments allows you to verify that the implemented measures meet your security requirements.
- In your system's security configuration, use a "defense-in-depth" strategy to restrict and control access to individual products and networks effectively.



3. System Description

The iO-GRID System GX Series is a modular input/output (I/O) system that works independently of the field bus. It combines a field bus coupler/controller (1) and modular I/O modules (2), creating a field bus node compatible with any signal type.



Figure 3.1: Example of a Field Bus Node

The field bus coupler/controller is compatible with various field bus systems.

The coupler includes a field bus interface, electronic components, and a power supply for the system. The field bus interface provides the physical connection to the respective field bus.

The electronic components process data from the bus modules and make it available for field bus communication.

The iO-GRID System GX Series supports a wide range of digital and analog I/O signals. Specialized I/O modules for specific functions can also be connected to the field bus coupler/controller.



3.1 Labels

The front labels display:

- Device name
- Names of display elements, connectors, and control components
- The side labels display:
- Manufacturer identification
- Connector pin assignments
- Certification information

3.2 Storage, Assembly, and Transportation

Whenever possible, components should be stored in their original packaging. The original packaging also provides optimal protection during transportation. Components must be stored and transported appropriately in suitable containers or packaging. Therefore, ESD precautions should be considered in this process.

3.3 Assembly Guidelines/Standards

- DIN 60204: Safety of machinery Electrical equipment of machines
- DIN EN 50178: Electronic equipment for use in power installations
- EN 60439: Specification for low-voltage switchgear and controlgear assemblies



3.4 Power Supply



Figure 3.2: Power Supply

Pos.	Description
1	fieldbus power supply 24 VDC (-15% / +20%)
2	fieldbus power supply 0 V
3	System power supply 24 VDC (-15% / +20%)
4	System power supply 0 V



4. Introduction

The X-Series Bus Coupler Module features a modular design combining a coupler with I/O modules, enabling easy replacement or expansion of modules. It includes an automatic boot scanning function for modules and dynamic I/O module station number configuration, optimizing system setup.

4.1 Coupler Product Interfaces and Functions



Figure 4.1 Front and Side Views of the Coupler

NO.	Name	Description
1	Module Status Indicator Light	Coupler system and communication status indicator light
2	Configuration Interface	USB Type C, System Configuration
3	Nameplate Slot	Slot for the module nameplate; users can define names as needed
4	Network Communication Interface	RJ45 x 2, System Network Protocol Communication Interface
5	Fieldbus Power Interface	Fieldbus (Field) Power Interface, 24V DC, Push-in Terminals
6	System Power Interface	Module System Power Interface, 24V DC, Push-in Terminals
7	Module Fixing Clamps	Used to secure and fasten modules to the rail







NO.	Name	Description
9	Module Side Cover Plate	Accessory to prevent exposure of the internal bus, placed on the rightmost module



4.2 Coupler Indicator Light Overview

Coupler Indicator Light						
Name	Label	Color	Status	Description		
Power	SD	Croon	On	Normal Power Supply		
Light	SP	Green	Off	Module Not Powered		
			On	System is in update mode (system updating)		
		Red	Off	System is in operational mode		
			Flashing	Blinks three times to reset to factory defaults		
System Indicator	SYS	C	On	System running		
Light	515	Green	Off	System Stopped		
		Red +	Flashing 1	System initialization to module station number configuration stage (flashes at 20Hz)		
		Green	Flashing 2	System is waiting for network connection before operation (flashes at 4Hz)		
		Red	On	Issues such as station failure, IO data exceeding 1024		
				bytes, over 64 IO modules, polling timeout		
			Off	No Error Alarm		
Alarm	AT		Off	Normal Mode		
Indicator Light	AL	Green	Flashing	Abnormal IO module polling status (e.g., the load side power is not supplied, module detecting overvoltage/overcurrent, analog module initialization failure, analog module open circuit, exceeding measurement or setting range, etc.)		
	ST	Red Green	On	Network Initialization Failed		
Connection			Off	Normal Mode		
Status Indicator			On	IO Data Exchange (<500ms)		
Light			Off	Network Cable Not Connected		
			Flashing	Network Cable Connected (Flashing at 2Hz)		
			Coupler	Indicator Light		
Name	Label	Color	Status	Description		
		Orange	On	Network Connected		
Connection	X1 X2		Off	No Network Connection, Abnormal		
Status Indicator			Flashing	Data Transmission		
Light		Green	On	100 Mbps		
			Flashing	10Mbps		



4.3 IO Module Panel Overview



Figure 4.3 Digital Module View

NO.	Name	Description		
1	Module Status Indicator Light	IO module system, power, and channel status indicator light		
2	Nameplate Slot	Slot for the module nameplate; users can define names as needed		
3	Module IO Signal Interface	Signal interface terminal, pluggable type		
4	Signal Cable Retaining Ring	Position for securing the signal cable junction		
5	Module Fixing Clamps	Used to secure and fasten modules to the rail		
6	Internal Bus (Right Side)	Connects to the communication and power bus interface of the next module		





Figure 4.4

NO.	Name	Description
7	Internal Bus (Left Side)	Connects to the communication and power bus interface of the previous module



4.3.1 Digital Input/Output Module

The indicator lights for the digital input/output module are described in the table below.

Status Indicator Light					
Name	Label	Color	Status	Description	
System Power		Green	On	System power is normal	
Indicator Light	SP		Off	System power is abnormal	
Field Bus Power	FP	Green	On	Field bus power is normal	
Indicator Light			Off	Field bus power is abnormal	
	AL	Red	Flashing 1	Module not successfully assigned (flashing at 10Hz)	
Module Status Indicator Light			Flashing 2	Module has an error warning (flashing at 2Hz) For example: No field bus power provided	
			Off	No error	
Channel	01~0F		On	Channel Input/Output Normal	
Light	00~1F	Off	No signal input/output on the channel		

I. GX-DI40N Indicator Lights and Module Side Label Diagram



Figure 4.5 GX-DI40N Diagram





Figure 4.6 GX-DI40P Diagram

III. GX-DI50N Indicator Lights and Module Side Diagram



Figure 4.7 GX-DI50N Diagram



IV. GX-DI50P Indicator Lights and Module Side Diagram





Figure 4.9 GX-DI51N Diagram









Figure 4.11 GX-DQ40N Diagram





Figure 4.12 GX-DQ40P Diagram

IX. GX-DQ50N Indicator Lights and Module Side Diagram



Figure 4.13 GX-DQ50N Diagram



X. GX-DQ50P Indicator Lights and Module Side Diagram



XI. GX-DQ51N Indicator Lights and Module Side Diagram



Figure 4.15 GX-DQ51N Diagram





XII. GX-DQ51P Indicator Lights and Module Side Diagram

Figure 4.16 GX-DQ51P Diagram



4.3.2 Analog Input/Output Module

The indicator lights for the analog input/output module are explained in the table below.

Status Indicator Light					
Name	Label	Color	Status	Description	
System Power	SD	Cream	On	System power is normal	
Indicator Light	SP	Green	Off	System power is abnormal	
Field Bus Power	ED		On	Field bus power is normal	
Indicator Light	FP	Green	Off	Field bus power is abnormal	
	AL	Red	Flashing 1	Module not successfully assigned (flashing at 10Hz)	
Module Status Indicator Light			Flashing 2	Module has an error warning (flashing at 2Hz) For example: Fieldbus power is not supplied or measurement/control range exceeded.	
			Off	No error	
Channal	A0~A3 / A0~A7	Green	On	Channel Input/Output Normal	
Indicator			Off	Error (module not calibrated)	
Light			Flashing	Warning (measurement/control range exceeded), open-loop detection	

I. GX-AI21V Indicator Lights and Module Side Diagram



Figure 4.13 GX-AI21V Wiring Diagram



II. GX-AI21C Indicator Lights and Module Side Diagram



Figure 4.14 GX-AI21C Wiring Diagram

III. GX-AI22V Indicator Lights and Module Side Diagram



Figure 4.15 GX-AI22V Wiring Diagram





IV. GX-AI22C Indicator Lights and Module Side Diagram

V. GX-AI31V Indicator Lights and Module Side Diagram



Figure 4.17 GX-AI22C Wiring Diagram



VI. GX-AI31C Indicator Lights and Module Side Diagram



VII. GX-AI32V Indicator Lights and Module Side Diagram



Figure 4.19 GX-AI32V Wiring Diagram





IX. GX-AQ21V Indicator Lights and Module Side Diagram



Figure 4.21 GX-AQ21V Wiring Diagram





GX-AQ21C Indicator Lights and Module Side Diagram Х.



Figure 4.23 GX-AQ22V Wiring Diagram





XII. GX-AQ22C Indicator Lights and Module Side Diagram

Figure 4.24 GX-AQ22C Wiring Diagram

XIII.GX-AQ31V Indicator Lights and Module Side Diagram



Figure 4.25 GX-AQ31V Wiring Diagram




XV. GX-AQ32V Indicator Lights and Module Side Diagram



Figure 4.27 GX-AQ32V Wiring Diagram







4.4 Module Specifications4.4.1 Communication Port Specifications

Communication Port Specifications	
Bus Protocol	PROFINET®
Bus Interface	2 x RJ-45
Speed	10/100 Mbps

4.4.2 **Electrical Specifications**

Electrical Specifications		
Coupler	Working Voltage	24 VDC (-15%~+20%)
	Working Current	Max.100 mA
Digital Input	Working Voltage	24 VDC (-15%~+20%)
Module	Working Current	Max.60mA
Digital Output	Working Voltage	24 VDC (-15%~+20%)
Module	Working Current	Max.150mA
Analog Input	Working Voltage	24 VDC (-15%~+20%)
Module	Working Current	Max.120mA
Analog Output	Working Voltage	24 VDC (-15%~+20%)
Module	Working Current	Max.112mA



4.4.3 General Specifications

General Specifications		
Size (W x D x H)	Coupler	25 x 105 x 69mm
	IO Module	12 x 105 x 69mm
Weight	Coupler	80g
	IO Module	64g
Operating Temperature	-10 60°C	
Storage Temperature	-25 85°C	
Relative Humidity	RH 95%, non-condensing	
Altitude Limit	< 2000m	
IP Protection Level	IP 20	
Pollution Degree	II	
Safety Certifications	CE	
Wire Gauge Range (IEC / UL)	0.2mm ² 1.5mm ² (AWG 2416)	
Recommended Terminals	DN00510D DN00710D	



4.4.4 Digital Module Specifications

Digital Input Specifications	
Number of Channels	16 or 32 Channels
Rated Voltage	24VDC
Signal Type	SINK(NPN) / SOURCE(PNP)
Signal 0 Voltage Range (NPN)	15VDC30 VDC
Signal 1 Voltage Range (NPN)	0 VDC10 VDC
Signal 0 Voltage Range (PNP)	0 VDC10 VDC
Signal 1 Voltage Range (PNP)	15 VDC30 VDC
Isolation	Optocoupler Isolation
Protection Circuit	Overvoltage Protection
Input Filtering Time	3ms
System Indicator Light	2 green lights (SP, FP), 1 red light (AL)
Channel Indicator Light	16, 32 green lights, input channel status
Digital Output Specification	ons
Number of Channels	16 or 32 Channels
Rated Voltage	24VDC
Signal Type	SINK(NPN) / SOURCE(PNP)
Load Specifications	Resistive Load, Inductive Load, Lamp Load
Channel Rated Current	$\leq 0.5 \text{ A}$
Isolation	Optocoupler Isolation
Protection Circuit	Overvoltage Protection
System Indicator Light	2 green lights (SP, FP), 1 red light (AL)
Channel Indicator Light	16, 32 green lights, output channel status



4.4.5 Analog Module Specifications

Analog Input Specificat	ions
Number of Channels	4 or 8 Channels
Resolution	12 bit / 16 bit
Input Signal (Voltage Type)	$-10 \text{ V} \sim +10 \text{ V}, 0 \text{ V} \sim +10 \text{ V}, 0 \text{ V} \sim +5 \text{ V}, 1 \text{ V} \sim +5 \text{ V}$
Input Signal (Current Type)	0~20mA \ 4~20mA
Accuracy	±0.1%
Input Impedance (Voltage Type)	$\geq 1 M\Omega$ impedance, typical
Input Impedance (Current Type)	$< 250\Omega$
Sampling Rate	1ms
Isolation	Optocoupler Isolation
System Indicator Light	2 green lights (SP, FP), 1 red light (AL)
Channel Indicator Light	4 or 8 green lights, input channel status

Analog Output Module Specifi	cation
Number of Channels	4 or 8 Channels
Resolution	12 bit / 16 bit
Signal	-10 V +10 V, 0 V +10 V, 0 V +5 V, 1 V +5 V
Signal	020mA \ 420mA
Load impedance (Voltage)	$> 2 \text{ K}\Omega$
Load impedance (Current)	$< 500\Omega$
Sampling Rate	Photocoupler Isolation
Isolation	2 green indicators (SP, FP), 1 red indicator (AL)
System Indicators	4 or 8 green indicators for output statuts



4.5 Module Dimensions

4.5.1 Coupler Dimensions



Figure 4.29 Coupler Dimensions Diagram





Figure 4.30 IO Module Dimensions Diagram



5. Common Module List

Part Number	Description	Remarks
GX-CL130	EtherNet/IP TM Coupler	
GX-DI40N	16-Channel Digital Input Module	SINK(NPN)
GX-DI40P	16-Channel Digital Input Module	SOURCE(PNP)
GX-DI50N	32-Channel Digital Input Module	SINK(NPN)
GX-DI50P	32-Channel Digital Input Module	SOURCE(PNP)
GX-DQ40N	16-Channel Digital Output Module	SINK(NPN)
GX-DQ40P	16-Channel Digital Output Module	SOURCE(PNP)
GX-DQ50N	32-Channel Digital Output Module	SINK(NPN)
GX-DQ50P	32-Channel Digital Output Module	SOURCE(PNP)
GX-AI21V	4-Channel Analog Input Module, 12-bit	
GX-AI22V	4-Channel Analog Input Module, 16-bit	
GX-AI31V	8-Channel Analog Input Module, 12-bit	
GX-AI32V	8-Channel Analog Input Module, 16-bit	-1010VDC \ 010VDC
GX-AQ21V	4-Channel Analog Output Module, 12-bit	05VDC \ 15VDC
GX-AQ22V	4-Channel Analog Output Module, 16-bit	
GX-AQ31V	8-Channel Analog Output Module, 12-bit	
GX-AQ32V	8-Channel Analog Output Module, 16-bit	
GX-AI21C	4-Channel Analog Input Module, 12-bit	
GX-AI22C	4-Channel Analog Input Module, 16-bit	
GX-AI31C	8-Channel Analog Input Module, 12-bit	
GX-AI32C	8-Channel Analog Input Module, 16-bit	020mA
GX-AQ21C	4-Channel Analog Output Module, 12-bit	420mA
GX-AQ22C	4-Channel Analog Output Module, 16-bit	
GX-AQ31C	8-Channel Analog Output Module, 12-bit	
GX-AQ32C	8-Channel Analog Output Module, 16-bit	



6. Installation and Removal

6.1 Installation

Align each module's side with the direction indicated by the arrow, and snap it onto the upper side of the DIN rail.

Once each module is positioned, the latch will automatically secure the module to the rail.



Figure 6.1 Module Installation Diagram

*Note: If the clip fails to engage, press the top of the clip to reset and secure it to the rail.



6.2 Removal

Use a screwdriver to pull down the plastic clip at the bottom of each module. Following the reverse order of installation, remove each module from the DIN rail.







7. Connecting Devices

7.1 Internal Communication Method

Communication between the fieldbus coupler and I/O modules is achieved through the side-mounted gold fingers.

The system and field equipment power supply for the I/O modules is also provided via the side gold fingers.

The side gold finger contact points consist of 10 data contact points.



7.2 Field Power Supply

The field equipment power supply is also connected to the I/O module via the side gold fingers. Therefore, the field-side power supply connected to the coupler must match the external equipment's power supply, and no additional connection to the COM point is required at the module end.



8. Module Wiring Instructions

8.1 Coupler Module Wiring Diagram







Digital IO Module Wiring Diagram GX-DI40N 8.2

8.2.1



Field Power Supply





8.2.2 GX-DI40P



Field Power Supply

Figure 8.3 GX-DI40P Wiring Diagram







Figure 8.4 GX-DI50N Wiring Diagram











8.2.5 GX-DI51N







8.2.6 GX-DI51P



Field Power Supply Figure 8.7 GX-DI51P Wiring Diagram







Field Power Supply

Figure 8.8 GX-DQ40N Wiring Diagram



8.2.8 GX-DQ40P



Field Power Supply

Figure 8.9 GX-DQ40P Wiring Diagram









8.2.10 GX-DQ50P





8.2.11 GX-DQ51N







8.2.12 GX-DQ51P



Field Power Supply

Figure 8.13 GX-DQ51P Wiring Diagram



Analog IO Module Wiring Diagram GX-AI21V / GX-AI22V 8.3 8.3.1





Figure 8.14 GX-AI21V / GX-AI22V Wiring Diagram











Figure 8.16 GX-AQ21V / GX-AQ22V Diagram







Figure 8.17 GX-AQ21C / GX-AQ22C Wiring Diagram



8.3.5



Figure 8.18 GX-AI31V / GX-AI32V Wiring Diagram

Device

Le

Dev

<u>∼</u>e



8.3.6 GX-AI31C / GX-AI32C



Figure 8.19 GX-AI31C / GX-AI32C Wiring Diagram



8.3.7 GX-AQ31V / GX-AQ32V



Figure 8.20 GX-AQ31V / GX-AQ32V Wiring Diagram



8.3.8 GX-AQ31C / GX-AQ32C



Figure 8.21 GX-AQ31C / GX-AQ32C Wiring Diagram



9. Parameter Setting and Configuration Instructions

9.1 Product Assembly Configuration

As shown in the image below, product configuration primarily involves couplers and I/O modules.



Figure 9.1

Quantity Limit for Configuration

- 1. A maximum of 64 physical I/O modules can be configured on the coupler.
- 2. The coupler supports up to 64 modules in total, including both expanded virtual and physical modules.



9.2 Coupler Parameter Explanation



榠組 翏數設正	
 1-General Settings 	
Module Slot	0
Time Lock(ms)	0
 2-Internet Settings 	
IP Address	192.168.1.20
Mask	255.255.255.0
Gateway	0.0.0.0
MAC	0C:73:EB:70:AA:74
✓ 3-Module Information	1
Firmware Version	1.0.0.r
Hardware Version	V01
Product Serial Number	GX-CI 130235100010

Figure 9.2 Coupler Parameters

9.2.1 General Settings

- Module Slot: Slot number (position); fixed at 0 for the coupler.
- Reset Time: If this parameter is not set, the default value is 0, meaning the reset function is disabled.

If the timeout parameter is set to 1000, it means that within 1 second, the module must exchange IO data with the host computer. If no data exchange occurs within this set time, the module will set the output channels to 0.

9.2.2 Network Settings

- IP Address: Can be configured in IPv4 network address format, with a default factory setting of 192.168.1.20.
- Subnet Mask: Configurable; default setting is 255.255.255.0.
- Default Gateway: Configurable; default setting is 19.168.1.20.
- Physical Address: Not configurable; MAC address is factory-set for network identification of different device modules.

9.2.3 Module Information

- Firmware Version: Current module firmware version
- Hardware Version: Module hardware design version
- Product Serial Number: Unique identifier for Daudin products

As shown in Figure 9.2, all parameters (except MAC) can be configured as needed. After completing the settings, proceed to upload the parameters as shown in Figure 6.3.







Before proceeding with relevant settings, system operation must be paused.


9.3 Factory Defaults

Apart from setting parameters through i-Designer, users can also reset system parameters using the reset button located inside the side casing.

Press Time/Mode	Application Mode
Light Press (<6 seconds)	Module restart (RESET)
Long Press (>6 seconds)	Restore parameter defaults (Application mode) NOTICE

NOTICE

When the user presses and holds for six seconds, the SYS indicator will turn off or remain solid red. After releasing the button, a flashing red light indicates the restoration of factory backup values or parameter defaults has been completed.



Figure 9.4 The System Reset Button.

DAUDIN CO., LTD.

9.4 Error Code Lookup

Users can query system error information and identify timed-out physical modules via the error code module (virtual module). Once the startup configuration is complete, the system will automatically place the error code module into the last three empty slots after the final module. If there are no empty slots available, the system will automatically ignore this.

Error Code	Purpose	Length (Word)
System Error	System error information	2
Error Module (01-32)	Physical modules 1-32 triggering timeout	2
Error Module (33-64)	Physical modules 33-64 triggering timeout	2

System Error: System error log, 32-bit data ordered from HSB to LSB

Description	System Error [4 Byte]									
	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0		
System Error [3]		Reserved								
System Error [2]		Reserved Err17 Err16								
System Error [1]	Err15	Err14	Err13	Err12	Err11	Err10	Err9	Err8		
System Error [0]	Err7	Err6	Err5	Err4	Err3	Err2	Err1	Err0		

Err0: Reserved

Err1: Bit set to 1 (Coupler/IO module): Indicates the first boot, with no relevant data in memory

Err2: Bit set to 1 (Coupler/IO module): Indicates memory exceeds the planned size

Err3: Bit set to 1 (Coupler/IO module): Indicates a Checksum error

Err4: Bit set to 1 (Coupler/IO module): Indicates boot failure

Err5: Bit set to 1 (IO module): Indicates that the power is not supplied to the load side of the IO module

Err6: Bit set to 1 (IO module): Indicates IO module over-voltage/over-current

Err7: Bit set to 1 (IO module): Indicates ADC read error in the analog module

Err8: Bit set to 1 (Coupler/IO module): Indicates memory write/erase operation failed

Err9: Bit set to 1 (Coupler): Indicates no saved station record in memory

Err10: Bit set to 1 (Coupler): Indicates the memory station record differs from the boot scan

Err11: Bit set to 1 (Coupler): Indicates no module station number was detected in the boot scan

Err12: Bit set to 1 (Coupler): Indicates communication timeout in Polling Mode for IO modules

Err13: Bit set to 1 (Coupler): Indicates station failure

Err14: Bit set to 1 (Coupler/IO module): Indicates data length in operating mode exceeds the set value

Err15: Bit set to 1 (Coupler): Indicates hot-swap function recovery failure

Err16: Bit set to 1 (Coupler): Indicates network initialization failure

Err17: Bit set to 1 (Coupler): Indicates register address exceeds the control range



Description	Error Module (01-32) [4 Byte]									
	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0		
Module Error [3]	Slot32	Slot31	Slot30	Slot29	Slot28	Slot27	Slot26	Slot25		
Module Error [2]	Slot24	Slot23	Slot22	Slot21	Slot20	Slot19	Slot18	Slot17		
Module Error [1]	Slot16	Slot15	Slot14	Slot13	Slot12	Slot11	Slot10	Slot9		
Module Error [0]	Slot8	Slot7	Slot6	Slot5	Slot4	Slot3	Slot2	Slot1		

Error Module (01-32): Logs timeout information for IO modules as a 32-bit data structure, arranged in sequence from HSB to LSB.

Slot1: IO module ID 1; Bit set to 1 indicates polling timeout for this module Slot2: IO module ID 2; Bit set to 1 indicates polling timeout for this module Slot3: IO module ID 3; Bit set to 1 indicates polling timeout for this module :

(and so on)

:

Slot32: IO module ID 32; Bit set to 1 indicates polling timeout for this module

Error Module (33-64): Logs timeout information for IO modules as a 32-bit data structure, arranged in sequence from HSB to LSB.

Description	Error Module (33-64) [4 Byte]									
	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0		
Module Error [3]	Slot64	Slot63	Slot62	Slot61	Slot60	Slot59	Slot58	Slot57		
Module Error [2]	Slot56	Slot55	Slot54	Slot53	Slot52	Slot51	Slot50	Slot49		
Module Error [1]	Slot48	Slot47	Slot46	Slot45	Slot44	Slot43	Slot42	Slot41		
Module Error [0]	Slot40	Slot39	Slot38	Slot37	Slot36	Slot35	Slot34	Slot33		

Slot33: IO module ID 33; Bit set to 1 indicates polling timeout for this module Slot34: IO module ID 34; Bit set to 1 indicates polling timeout for this module Slot35: IO module ID 35; Bit set to 1 indicates polling timeout for this module :

(and so on)

:

Slot64: IO module ID 64; Bit set to 1 indicates polling timeout for this module



9.5 Analog Module A/D and D/A Conversion Parameters and Settings

9.5.1 Voltage Input/Output Range (-10V to 10V)



Figure 9.5 Conversion Characteristics for the -10V to 10V Range.



	Volta	age conver	sion table	•						
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
10	30000	30300	30600	30900	31200	31500	-	-	-	-
9	27000	27300	27600	27900	28200	28500	28800	29100	29400	29700
8	24000	24300	24600	24900	25200	25500	25800	26100	26400	26700
7	21000	21300	21600	21900	22200	22500	22800	23100	23400	23700
6	18000	18300	18600	18900	19200	19500	19800	20100	20400	20700
5	15000	15300	15600	15900	16200	16500	16800	17100	17400	17700
4	12000	12300	12600	12900	13200	13500	13800	14100	14400	14700
3	9000	9300	9600	9900	10200	10500	10800	11100	11400	11700
2	6000	6300	6600	6900	7200	7500	7800	8100	8400	8700
1	3000	3300	3600	3900	4200	4500	4800	5100	5400	5400
0	0	300	600	900	1200	1500	1800	2100	2400	2700
0	0	-300	-600	-900	-1200	-1500	-1800	-2100	-2400	-2700
-1	-3000	-3300	-3600	-3900	-4200	-4500	-4800	-5100	-5400	-5700
-2	-6000	-6300	-6600	-6900	-7200	-7500	-7800	-8100	-8400	-8700
-3	-9000	-9300	-9600	-9900	-10200	-10500	-10800	-11100	-11400	-11700
-4	-12000	-12300	-12600	-12900	-13200	-13500	-13800	-14100	-14400	-14700
-5	-15000	-15300	-15600	-15900	-16200	-16500	-16800	-17100	-17400	-17700
-6	-18000	-18300	-18600	-18900	-19200	-19500	-19800	-20100	-20400	-20700
-7	-21000	-21300	-21600	-21900	-22200	-22500	-22800	-23100	-23400	-23700
-8	-24000	-24300	-24600	-24900	-25200	-25500	-25800	-26100	-26400	-26700
-9	-27000	-27300	-27600	-27900	-28200	-28500	-28800	-29100	-29400	-29700
-10	-30000	-30300	-30600	-30900	-31200	-31500	_	_	_	_

NOTICE

Input/Output data range: -31500 (-10.50V) to 31500 (+10.50V). If the input/output data exceeds this range, values will be limited to the maximum value (31500) or the minimum value (-31500).



9.5.2 Voltage Input/Output Range (0V to 10V)



Figure 9.6 Conversion Characteristics for the 0V to 10V Range.

	voltage conversion table.										
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
10	30000	30300	30600	30900	31200	31500	-	-	-	-	
9	27000	27300	27600	27900	28200	28500	28800	29100	29400	29700	
8	24000	24300	24600	24900	25200	25500	25800	26100	26400	26700	
7	21000	21300	21600	21900	22200	22500	22800	23100	23400	23700	
6	18000	18300	18600	18900	19200	19500	19800	20100	20400	20700	
5	15000	15300	15600	15900	16200	16500	16800	17100	17400	17700	
4	12000	12300	12600	12900	13200	13500	13800	14100	14400	14700	
3	9000	9300	9600	9900	10200	10500	10800	11100	11400	11700	
2	6000	6300	6600	6900	7200	7500	7800	8100	8400	8700	
1	3000	3300	3600	3900	4200	4500	4800	5100	5400	5400	
0	0	300	600	900	1200	1500	1800	2100	2400	2700	
0	0	-300	-600	-900	-1200	-1500	-	-	-	-	

Voltage conversion table:

NOTICE

Input/Output data range: -1500 (-0.50V) to 31500 (+10.50V).

If the data falls outside this range, it will be limited to the maximum of 31500 (or a minimum of -1500.)







Current Conversion Table

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
20	30000	30150	30300	30450	30600	30750	30900	31050	31200	31350
19	28500	28650	28800	28950	29100	29250	29400	29550	29700	29850
18	27000	27150	27300	27450	27600	27750	27900	28050	28200	28350
17	25500	25650	25800	25950	26100	26250	26400	26550	26700	26850
16	24000	24150	24300	24450	24600	24750	24900	25050	25200	25350
15	22500	22650	22800	22950	23100	23250	23400	23550	23700	23850
14	21000	21150	21300	21450	21600	21750	21900	22050	22200	22350
13	19500	19650	19800	19950	20100	20250	20400	20550	20700	20850
12	18000	18150	18300	18450	18600	18750	18900	19050	19200	19350
11	16500	16650	16800	16950	17100	17250	17400	17550	17700	17850
10	15000	15150	15300	15450	15600	15750	15900	16050	16200	16350
9	13500	13650	13800	13950	14100	14250	14400	14550	14700	14850
8	12000	12150	12300	12450	12600	12750	12900	13050	13200	13350
7	10500	10650	10800	10950	11100	11250	11400	11550	11700	11850
6	9000	9150	9300	9450	9600	9750	9900	10050	10200	10350
5	7500	7650	7800	7950	8100	8250	8400	8550	8700	8850
4	6000	6150	6300	6450	6600	6750	6900	7050	7200	7350
3	4500	4650	4800	4950	5100	5250	5400	5550	5700	5850
2	3000	3150	3300	3450	3600	3750	3900	4050	4200	4350
1	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850
0	0	150	300	450	600	750	900	1050	1200	1350
0	0	-150	-300	-450	-600	-750	-900	-1050	-1200	-1350

NOTICE

The input/output data range is from -1500 (-1.0mA) to 31500 (+21.0mA).

If the data exceeds this range, it will be limited to the maximum of 31500 (or a minimum of - 1500.)



9.5.4 Current Input/Output Range: 4–20mA







Current Conversion Table

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
20	30000	30188	30375	30563	30750	30983	31125	31313	31500	
19	28125	28313	28500	28688	28875	29063	29250	29438	29625	29813
18	26250	26438	26625	26813	27000	27188	27375	27563	27750	27938
17	24375	24563	24750	24938	25125	25313	25500	25688	25875	26063
16	22500	22688	22875	23063	23250	23438	23625	23813	24000	24188
15	20625	20813	21000	21188	21375	21563	21750	21938	22125	22313
14	18750	18938	19125	19313	19500	19688	199875	20063	20250	20438
13	16875	17063	17250	17438	17625	17813	18000	18188	18375	18563
12	15000	15188	15375	15563	15750	15938	16125	16313	16500	16688
11	13125	13313	13500	13688	13875	14063	14250	14438	14625	14813
10	11250	11438	11625	11813	12000	12188	12375	12563	12750	12938
9	9375	9563	9750	9938	10125	10313	10500	10688	10875	11063
8	7500	7688	7875	8063	8250	8438	8625	8813	9000	9188
7	5625	5813	6000	6188	6375	6563	6750	6938	7125	7313
6	3750	3938	4125	4313	4500	4688	4875	5063	5250	5438
5	1875	2063	2250	2438	2625	2813	3000	3188	3375	2563
4	0	188	375	563	750	983	1125	1313	1500	1688
3	-		-1500	-1313	-1125	-983	-750	-563	-375	-188

NOTICE

The input/output data range is from -1500 (3.2mA) to 31500 (+20.8mA).

If the data exceeds this range, it will be limited to the maximum of 31500 (or a minimum of - 1500.)



9.5.5 Function Setup Instructions

9.5.5.1 Offset Adjustment

When the output to an external device is 0 or the external device's output is 0, but the reading from the external device is not 0, or when an analog input module reads a non-zero value, the offset should be adjusted.

Example: If the module outputs 0V to the external device and the reading shows a deviation of -50 (DEC), set the OFFSET to 50.





9.5.5.2 Upper and Lower Limit Settings Example

For an output range of -10V to 10V, if the upper limit is set to 3000 (DEC) and the lower limit is set to 500 (DEC)



Figure 9.10 Upper and Lower Limit Setting Diagram

Original Register Value (DEC)	Upper/Lower Limit Register Value (DEC)	Analog Output Voltage
30000	3000	10
15000	2375	5
0	1750	0
-15000	1125	-5
-30000	500	-10



10. i-Designer Operating Instructions

10.1 Installation

Download the i-Designer program from the official website, then click on the program (as shown in the figure) to install it.



Figure 10.1 Program Icon

After reading the user agreement, please check the box and click Start Installation.



Figure 10.2 Click Start Installation



During installation, the progress will be displayed.



Figure 10.3 Installation Progress

Once the software installation is complete, you can choose to run it immediately by clicking the Finish button.





10.2 UI Screen Description

After installation, locate the program icon on the desktop and click it to open the settings screen (see the figure below).



Figure 10.5 Program Icon

The screen is organized as follows, from top to bottom:

- I. Tab Area: Select different product series or switch languages.
- II. Function Key Area: Displays different function keys based on the selected tab.
- III. Display and Configuration Area: Shows the module status and settings.
- IV. Progress Display Area: Displays the progress of various functions in percentages, helping users understand the current execution status, such as configuration or updates.



Figure 10.6 Default Homepage



Tab Area:

- (1) Homepage Tab: Provides information about i-Designer and options for switching the language. Refer to sections 8.2 and 8.3 for more details.
- (2) Product Settings Tab: Used for setting parameters for various **iD**-**GRID** product series.



Figure 10.7 Tabs



Function Key Area: The function keys displayed here vary based on the selected tab and product. The relevant descriptions are as follows:

Icon	Name	Description						
1	About i- Designer	Shows software version information.						
	Switch Languages	Switches between Traditional Chinese, Simplified Chinese, and English.						
t↓	Connection Mode	Offers automatic or manual module connection modes.						
	Connection Info							
~~	Connect	Connects to the module.						
~~	Disconnect	Disconnects from the module.						
0	System stop	Temporarily stops the module system.						
0	System running	g Starts the module system.						
Ð	Auto Station Assignment	Reconfigures the station numbers of the module system.						
1	Upload parameters	Updates the module settings.						
~	Online Adjustment							
	Check for Updates	Searches and compares the current module firmware version to check whether it is the latest.						
G	Firmware update	Manually updates the module firmware.						
-	Point Information Overview	Displays all operational data of the modules.						



	i-De	esigner[USB Mode]		– 🗆 X
Homenage M Series Online Settings	C Series Online Settings Nen	no Series Online Settings	Series Online Settings	
nomepage in series on the settings	e series offinite settings - Hen	o series online settings	Series Online Settings	
	A 🚺 🔁 🖉		; 🗸 🗎	
Communication Communication Connect Mode - Information	DisConnect System System ON OFF	Addressing Upload Reloa Parameters	d Online Upc Configuration Ch	lates Firmware Module eck Update Monitor
Communication		Control		
Module List	Module Configuration		Module Settings	
Module Name Module	GX-CL12		✓ 1-General Settings	
→ v GX-CL120 0			Module Slot	0
GX-HC100 1			Time Lock(ms)	0
GX-nc100 2			✓ 2-Module Information	on
			Firmware Version	1.1.1.r
			Hardware Version	V01
			Product Serial Number	GX-CL120241000808
	Log Information			
	DateTime	Description		
	2024-12-05 09:54:59	Read addressing successfully	/	
	2024-12-05 09:54:59	Connect successfully		
	→ ② 2024-12-05 09:55:29	System stop successfully		



Display and Configuration Area i-Designer[USB Mode] M Series Online Settings Nemo Series Online Settings GX Series Online Settings Homepage C Series Online Settings **⊠**= □= P C C ~ \sim Updates DisConnect System Addressing Upload Reload Online Firmware ON Parameters Configuration Ċheck Update Communication Module List Module Configuration Module Settings Module Name Module ... ✓ 1-General Settings ✓ GX-CL120 0 Module Slot 0 GX-HC100 1 Time Lock(ms) 0 GX-HC100 2 ✓ 2-Module Information Firmware Version 1.1.1.r Hardware Version V01 Product Serial Number GX-CL120241000808 Log Information DateTime Description 2024-12-05 09:54:59 Ø Read addressing successfully Ø 2024-12-05 09:54:59 Connect successfully Ø 2024-12-05 09:55:29 System stop successfully \rightarrow

Figure 10.9 Display and Configuration Area





Figure 10.10 Progress Display Area



10.3 i-Designer Information Verification



Figure 10.11 Software Information



10.4 Language Settings

i-Designer currently supports three languages: Traditional Chinese, Simplified Chinese, and English. Use this feature to change the language.



Figure 10.12 Language Selection



10.5 COM Port Connection Settings

i-Designer communicates with the **iD**-**G**RID coupler module primarily through the COM Port interface. Connection modes include automatic module search mode and manual COM Port connection mode.

Before setting up a custom connection with the **iD** - **G** RID, please confirm the COM Port number assigned to the coupler module to proceed with configuration.



Figure 10.13 Connection Mode

					i-Designe	r						×
Homepage	M Series Online Settings	C Series On	line Setting:	s Ne	mo Series Onl	ine Settings	GX Se	eries Online Settin	gs			
↓		~~	0	\oslash	đ	1	B	\sim		C		
Communication Mode +	Communication Connect Information	DisConnect	System ON	System OFF	Addressing	Upload Parameters	Reload	Online Configuration	Updates Check	Firmware Update		
Auto Mode	mmunication				(Control						
🗸 🛛 Custom Mo	de	Module Con	figuration					Module Settings				
Module Na	ame Module											
		Log Informa	tion									
		D	ateTime		Descripti	on						
		2	024-12-05 (09:59:38	Read add	dressing succe	essfully					
		2	024-12-05 (09:59:39	Connect	successfully						
		2	024-12-05 (09:59:39	Pair succ	essfully						
		→ 📀 2	024-12-05	10:02:17	Disconne	ect						*

Figure 10.14 Custom Mode Settings



Device Manager	- 0	×
Action View Help		
		_
HQN2188		1
Audio inputs and outputs		
Audio Processing Objects (APOs)		
Batteries		
Biometric devices		
Bluetooth		
> 👰 Cameras		
> 💻 Computer		
Disk drives		
Display adapters		
> 📓 Firmware		
Human Interface Devices		
IDE ATA/ATAPI controllers		
Jungo Connectivity		
Keyboards		
Mice and other pointing devices		
> Monitors		
Network adapters		
Ports (COM & LPT)		
₩ USB 序列裝置 (COM3)		- 1
Print queues		
Processors		
Security devices		
SIMATIC NET		
Smart card readers		

Figure 10.15 Confirm COM Port Number in Device Manager

🚠 Co	mmunication In	formation	×
Cou	pler Module		
\checkmark	USB Mode		
	Port Number	COM3	
		0	
		Save	

Figure 10.16 Set COM Port Connection



10.6 Connection Setting Instructions

Once the connection is successful, the current connection mode will be displayed in the window, and the firmware version of all modules will be detected. If the system is running, a pop-up window will ask whether to stop the system to perform firmware version detection for all modules.

						i-Designe	er						×
Homepage	M Series Online S	ettings	C Series Onl	ine Setting	s Ne	mo Series On	line Settings	GX S	eries Online Settir	igs			
t↓	D.	~~	~	0	\oslash	đ	1	B	\sim		C		
Communication Mode +	Communication Information	Connect	DisConnect	System ON	System OFF	Addressing	Upload Parameters	Reload	Online Configuration	Updates Check	Firmware Update		
	Communicatio	on	-			(Control						
Module List			Module Conf	iguration					Module Settings				
Module Na	ime Modi	ule		5					5				
			Log Informat	ion									
			D	ateTime		Descript	ion						
			⊘ 20	024-12-05	09:59:38	Read ad	dressing succe	essfully					
			20	024-12-05	09:59:39	Connect	successfully						
			20	024-12-05	09:59:39	Pair suce	cessfully						
			→ ⊘ 20	024-12-05	10:02:17	Disconn	ect						*
													•

Figure 10.17 Executing Connection



DALON					i-[Designer[USB	Mode]					-	□ ×
Homepage	M Series Online S	Settings	C Series Or	line Setting	js Ne	emo Series Onl	ine Settings	GX 9	Series Online Setti	ngs			
↑ ↓	D.	~	~~	0	0	đ	1	6	\sim	⊻ = □=	C	•	
Communication Mode +	Communication Information	Connect	DisConnect	System ON	System OFF	Addressing	Upload Parameters	Reload	l Online Configuration	Updates Check	Firmware Update	Module Monitor	
	Communicati	ion				(Control						
Module List			Module Con	figuration					Module Register	r			
Module Na	ime Mod	lule	GX-CL122	° 1°					✓ 1-General Set	tings			
→ → GX-CL1	20 0 IC100 Messa	age	9 EMOT								×		
GX-H	IC100	<u> </u>									_		
			der to detect v	vhether ther	re is a new	v firmware ver	sion for the m	odule. d	o vou want to stor	the system	?		
								,	-) · · · · · · · · · · ·		-		
						Yes	No				2410	80800	
					<u>[</u>								
			Log Informa	tion									
			[DateTime		Descript	tion						
			2	2024-12-05	09:54:59	Read ac	Idressing suc	cessfully					
			\rightarrow \bigcirc 2	2024-12-05	09:54:59	Connec	t successfully						

Figure 10.18 After Connection, Module Automatically Confirms Module Version and Prompts for Updates



Monorage Moning Onli	no Sattings	Sorios Oplino	i-Des	igner[USB Mode]	erice Opline Settings	- 🗆 X
N Ba						C O
Communication Communic Mode Informat			Fir	mware Update	×	mware Module pdate Monitor
Commu	Mc	bus Station	Modbus Name	Current Firmware Version	Newest Firmware Version	
Module List	\rightarrow \checkmark 2		GX-HC100	1.0.2.r	1.0.3.r	
Module Name						
→ v GX-CL120						
GX-HC100						
GX-HC100						
						20241000808
				Start Update		
		2024	-12-05 09:54:59	Connect successfully		
	\rightarrow	✓ 2024	-12-05 09:55:29	System stop successfully		

If the system is stopped, i-Designer will automatically detect the module version.

Figure 10.19 Module Version Information Display





Only after the system is stopped can the module functions be configured.

Figure 10.20 System Stop Screen

	i-Desi	gner[USB Mode]	- 🗆 X
Homepage M Series Online Settings	C Series Online Settings Nemo	Series Online Settings GX Series Online Setting	s
		🗗 🕇 C 🗸	
Communication Communication Connect Mode • Information	DisConnect System System Ac ON OFF	Idressing Upload Reload Online Parameters Configuration	Updates Firmware Module Check Update Monitor
Communication		Control	
Module List	Module Configuration	Module Settings	
Module Name Module	Gratia I	✓ 1-General Settir	ıgs
→		Module Slot	0
GX-HC100 1		Time Lock(ms)	0
GX-HCI00 2		✓ 2-Module Information	nation
		Firmware Version	1.1.1.r
		Hardware Version	V01
		Product Serial Num	ber GX-CL120241000808
	Log Information		
	DateTime	Description	
	✓ 2024-12-05 10:05:54	Read addressing successfully	A
	2024-12-05 10:05:54	Connect successfully	
	2024-12-05 10:06:02	System run successfully	
	→ ② 2024-12-05 10:06:38	System stop successfully	
			•

Figure 10.21 System Stop Screen



When connecting to X series modules, if the listed modules do not match the actual modules, you can search for modules through the Auto Station Assignment function.

					i-l	Designer[USB	Mode]						×
Homepage	M Series Online	e Settings	C Series On	line Setting	s Ne	emo Series On	line Settings	GX	Series Online Settir	ngs			
↑ ↓	D.	~~	~~	0	\oslash	đ		ß	~		C	0	
Communication Mode +	Communicatio Information	n Connect	DisConnect	System ON	System OFF	Addressing	Upload Parameters	Reloa	d Online Configuration	Updates Check	Firmware Update	Module Monitor	
	Communica	tion					Control						
Module List			Module Con	figuration		Addressing	1		Module Settings				
									✓ 1-General Sett				
→ ✓ GX-CL1													
									✓ 2-Module Info				
			Log Informa	tion									
			C	ateTime		Descrip	otion						
			2	024-12-05	09:54:59	Read a	ddressing succ	cessfully	/				
			2	024-12-05	09:54:59	Connec	t successfully						
			2	024-12-05	09:55:29	System	stop successfu	ully					
			→ 📀 2	024-12-05	09:59:31	Addres	sing						
													_
Status						209							

Figure 10.22 Station Assignment in Progress



After configuring the module functions, you must click "Upload Parameters" to save the settings correctly.

Maion		Ĭ				i-l	Designer[USB	Mode]					-	×
Но	mepage	M Series On	line Settings	C Series On	line Setting	gs Ne	emo Series On	line Settings	GX	Series Online Settir	ngs			
	↑ ↓	- Da	~~	~	0	\oslash	đ	1	C	~	⊻ = □=	С	0	
Com	munication Mode 👻	Communica Informatio	tion Connect on	DisConnect	System ON	System OFF	Addressing	Upload Parameters	Reloa	d Online Configuration	Updates Check	Firmware Update	Module Monitor	
		Commur	ication					Control						
M	odule List			Module Con	figuration			Upload Par	ameter	5 Iodule Settings				
	Module Na	me	Module	GX-CL122						✓ 1-General Sett	ings			
\rightarrow	✓ GX-CL1	20	0	SP EtherO27 SP EtherO27 AL ST SP EtherO27 AL AL AL AL AL AL AL AL AL AL	HC100 Prunte					Module Slot	0			
	GX-F	IC100	1		21 0 27 000 m gi					Time Lock(ms)	0			
	GX-F	10100	2							✓ 2-Module Info	rmation			
										Firmware Version	1.1	.1.r		
										Hardware Version	VO	1		
										Product Serial Nu	mber GX	-CL12024100	80800	
				Log Informa	tion									
				D	ateTime		Descript	tion						
				2	024-12-05	10:05:54	Connect	t successfully						
				2	024-12-05	10:06:02	System	run successful	ly					
				2	024-12-05	10:06:38	System	stop successfu	lly					
				→ 🔮 2	024-12-05	10:08:17	Upload	parameters su	ccessful	ly				*

Figure 10.23 Screen After Uploading Parameters



You can view the IO point status through the online debugging feature. Note: You must disconnect from the external master station before proceeding.

								i-I	Designer[USI	B Mode]		1		U	-		×
F	Homepage	M Ser	ries Or	nline Se	ttings	C Series (Online Settin	gs Ne	emo Series Or	nline Settings	GX Se	ries Online Settir	ngs				
	↑ ↓		D		~	~	0	0	đ	1	B	\sim		C	•	1	
Co	ommunication Mode -	Com Info	munic ormati	ation on	Connect	DisConne	ct System ON	System OFF	Addressing) Upload Parameters	Reload	Online Configuration	Updates Check	Firmware Update	Module Monitor		
		Co	ommu	nicatio	n					Control					_	4	
	Modulo List		Locat	tion Inf	ormation	Overview								o x			
	Wodule List			Name			Value								1		
	Module N	ame	r	INdiffe			value								-		
Ľ	$\rightarrow \vee \text{GX-CL1}$	L20	\rightarrow	✓ Mo	dule: Stat	ion : 1 Moo	lule Name :	GX-HC100) (DC_BA)								
	GX-	HC100		CH1Ph	ase_A Inp	ut Status	0										
	GX-I	HCIU		CH1Ph	ase_B Inp	ut Status	0										
				CH1Ph	ase_Z Inp	ut Status	0										
				CH1Di	gital Input	t Signal	0										
				CH1Co	unter Ove	erflow Fl	0								0.0		
				CH1Co	unter Und	derflow F	0								08		
				CH1Co	unter Up	Flag (Bit6)	0										
				CH1Co	unter Dov	wn Flag (0										
				CH2Ph	ase_A Inp	ut Status	0										
				CH2Ph	ase_B Inp	ut Status	0										
				CH2Ph	ase_Z Inp	ut Status	0										
				CH2Di	gital Input	t Signal	0										
				CH2Co	unter Ove	erflow Fl	0										-
				CH2Co	unter Und	derflow F	0										- 1
				CH2Co	unter Up	Flag (Bit6)	0										
				CH2Co	unter Dov	wn Flag (0								_		
			Sa	ave To I	Excel												-
								_								_	

Figure 10.24 Online Adjustment Screen



						esigner[USB	Modej						
omepage	M Series Online S	Settings	C Series Onl	ine Setting	js Ne	mo Series Onl	ine Settings	GX Se	ries Online Settir	ngs			
↑ ↓			~~	0	\oslash	1	1	C	 Image: A second s	⊠=	C		
nmunication Mode -	Communication	Connect	DisConnect	System	System	Addressing	Upload Parameters	Reload	Online	Updates Check	Firmware Undate	Module Monitor	
	Communicatio	on			011	(Control		conngulation	eneck	opulite		
Aodulo List						Firmware Up	date				×		
Module N	ama												
GX-CL	120		Mobus Statio	n Modb	us Name	Curre	ent Firmware \	/ersion	Newest Firmw	vare Version			
GX-	HC100	→ 🗸	2	GX-H	C100	1.0.2	r		1.0.3.r				
GX-	HC100												
											02410	00808	
											02410	00808	
						Start Upda	ite				_		

The system will detect whether the current module version is the latest and prompt for updates.

Figure 10.25 Firmware Update Screen



The GX-CL140 will display the Modbus register positions for the configured IO modules.

-														
Homepage	M Series Onlin	e Settings 🛛 🤇	C Series Online Se	ttings Ner	no Series Onlir	ne Settings	GX Set	ies Online Setti	ngs					
î↓				0	Ð	1	C	~	¥-	III-C	-			
		ion Connect I 1 cation	DisConnect Sys C	tem System DN OFF	Addressing	Upload Parameters Control	Reload	Online Configuration	Updates Check	Firmware Update 1.	Location Info Overvie	rmation w		
Module List	L	ocation Informa	tion Overview								- x	tings		
Module Na	me	Name	Input Addr	Output Ad.	Input Ad	Output A	Value					al Settings		
→ - GX-CL14	40												Two in the second se	
GX-D	140P	Module: S	Station : 1 Module	Name : GX-DI	40P								1000	
GX-D	0040P	CH01 (Bit0)	0x0000		0x1000								1000	
GX-D	0140N	CH02 (Bit1)	0x0001		0x1000								UN	
GX-D	0040N	CH03 (Bit2)	0x0002		0x1000							et Settings		
GX-A	021V	CH04 (Bit3)	0x0003		0x1000								192.168.1.40	
GX-A	(021V	CH05 (Bit4)	0x0004		0x1000								255.255.255.0	
	ing an a t	CH06 (Bit5)	0x0005		0x1000								192.168.1.1	
		CH07 (Bit6)	0x0006		0x1000								00:00:00:00:00:00	
		CH08 (Bit7)	0x0007		0x1000							alaformation		
		CH11 (Bit8)	0x0008		0x1000							emoniation		
		CH12 (Bit9)	0x0009		0x1000							rsion	1.0.0.r	
		CH13 (Bit10)	0x000A		0×1000							ersion	X01	
		CH14 (Bit11)	0x000B		0x1000							al Number	GX-CL14000000001	
		CH15 (Bit12)	0x000C		0x1000									
		CH16 (Bit13)	0x000D		0x1000									
		CH17 (Bit14)	0x000E		0×1000									
		CH18 (Bit15)	0x000F		0x1000									
		+ Module: S	Station : 2 Module	Name : GX-DC	240P									
		CH01 (Bit0)		0x0000		0x2000								
		CH02 (Bit1)		0x0001		0x2000								
		CH03 (Bit2)		0x0002		0x2000								
		CH04 (Bit3)		0x0003		0x2000								
		CH05 (Bit4)		0x0004		0x2000								
	2.	La serara		1										
		Save To Excel												

Figure 10.26 Point Information Overview Screen