CREVIS

FnIO G-Series

Remote I/O System for Industrial Automation

www.crevis.co.kr

DeviceNet · PROFIBUS · CANopen · MODBUS · EtherCAT · CC-Link IE Field · PROFINET · EtherNet/IP · CC-Link

Various Industrial Protocols

Network adapters for over 10 types of industrial protocols

Satisfying Users' Demands

Configuring nodes by users' devices and systems

Excellent Compatibility

Compatible with all types of network adapters and I/O modules

- G-Series is the best solution for users that can provide 10 types of industrial protocols, and it will help users configure nodes by their devices and systems.

- 96 types of I/O modules consist of Digital, Analog, and Special I/O modules that can work with most sensors, and signals for users' automation environment. And they can be easily combined with any configuration.

- G-Series can ensure their reliability by meeting International Standards (CE, UL, FCC, Reach, and RoHS)

- Robust and safe system configuration can be available, because G Series can use the Din Rail in accordance with Industrial Standards. G-Series system will be more safely and firmly endured, and fixed on the Din Rail from the influence of vibration, and shock.

DeviceNet   PROFIBUS   CANopen   MODBUS   EtherCAT

CC-Link IE   PROFINET   EtherNet/IP   CC-Link   CC-Link IE Field Basic

CODESYS

RoHS II   REACH   CE   UL   FC   KC
2015 / 863 / EU   EC NO. 190712006

ISO 14001:2004   ISO 9001:2008

Various Fieldbus Protocol

There are many types of network adapters depending on the industrial protocols. And users can combine the network adapters and I/O modules by their demands, system, specification, and application.
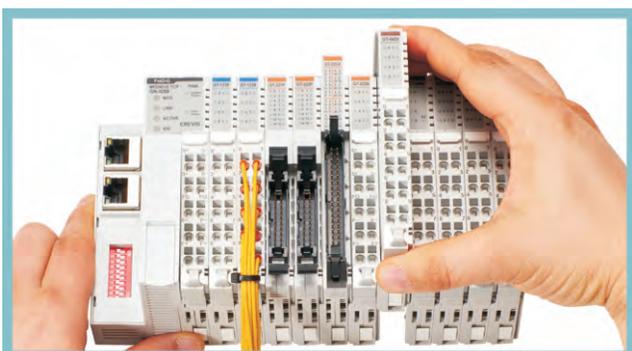

International Certificate

G-Series completed CE, UL, Reach, and RoHS certificates. So, its best performance can be used for the application under the tough environment.
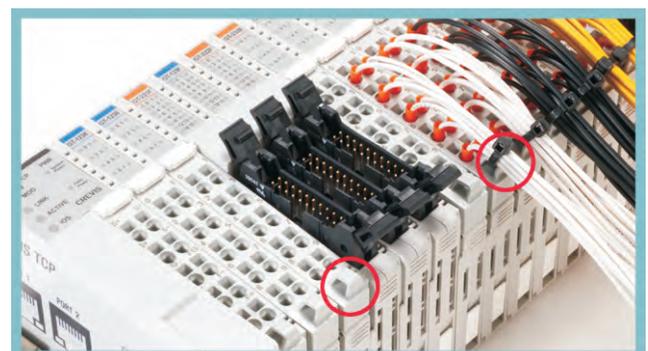

Efficient Maintenance

G-Series can extend I/O modules up to 63 slots by user's system demand. And efficient maintenance is available by supporting easy I/O configuration, and exchange.
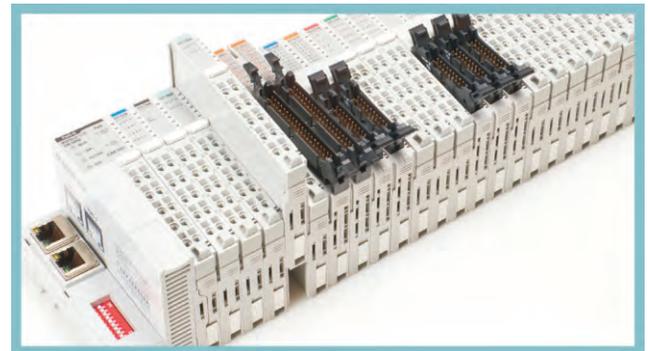
Designed for Users' Convenience

G-Series is the slice type for I/O connection & extension, and has the removable terminal block for easy wiring.
So, users can repair, and change I/O modules for the system maintenance without new wiring.

Various I/O Modules for Users' demands

G-Series releases newly 32 points digital I/O module with same size of normal I/O type of World's First as well as supports the fast internal bus speed (Max. 1ms). And it consists of general DIO, AIO, and Special type like high speed counter, interface module etc. So, it will provide the innovative solution to users.

User's Convenience

The removable terminal block will support the easy maintenance, and it will help users to repair, and change I/O modules without new wiring. And I/O module has the cable ring that can be tied with wiring. So, it will help wires can be arranged, clean, and fixed. Head type I/O connector will support a lot of I/O points like 16 & 32 points.
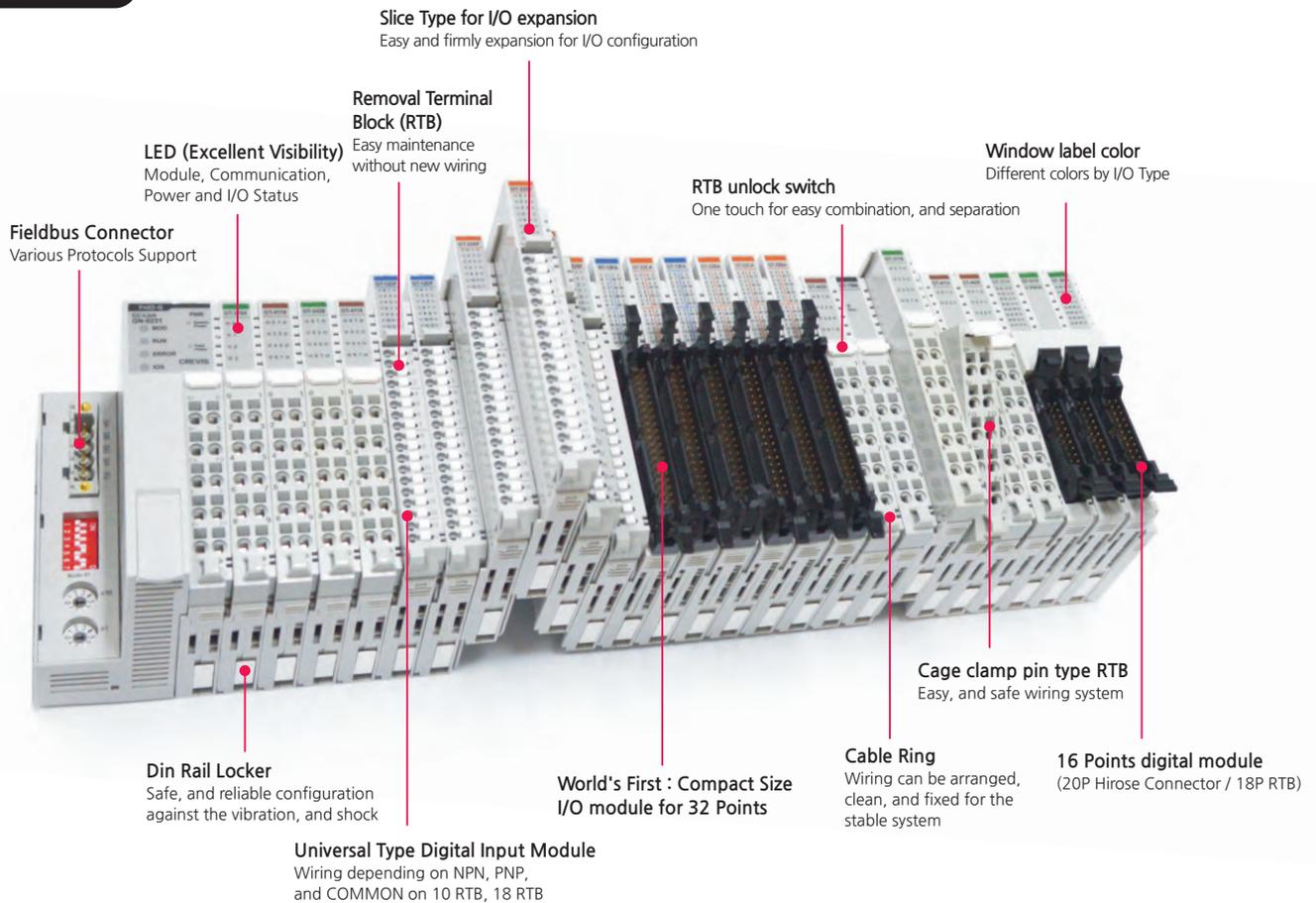
FnIO G-Series
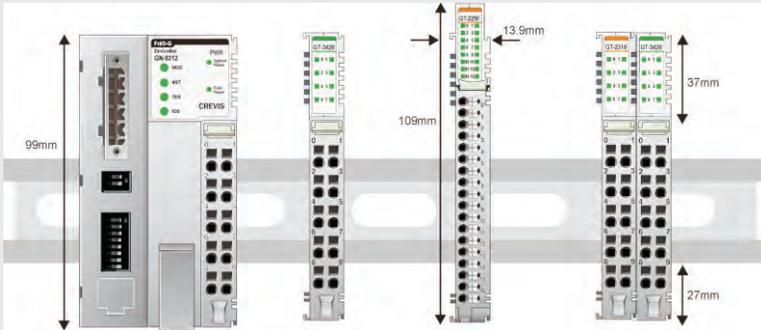
* Internal Bus Speed : 1ms (In / Out 128 bytes)
* Module Expansion : 63 I/O Slots
* Various Certificate Support by the International Industrial Standard

Space-Saving
* Network Module (Width) : 54mm
* I/O Module (Width) : 12mm

(dimensions shown: 13.9mm, 37mm, 109mm, 99mm, 27mm)

Features

Slice Type for I/O expansion
Easy and firmly expansion for I/O configuration

Removal Terminal Block (RTB)
Easy maintenance without new wiring

LED (Excellent Visibility)
Module, Communication, Power and I/O Status

Window label color
Different colors by I/O Type

RTB unlock switch
One touch for easy combination, and separation

Fieldbus Connector
Various Protocols Support

Din Rail Locker
Safe, and reliable configuration against the vibration, and shock

Universal Type Digital Input Module
Wiring depending on NPN, PNP, and COMMON on 10 RTB, 18 RTB

World's First : Compact Size I/O module for 32 Points

Cable Ring
Wiring can be arranged, clean, and fixed for the stable system

Cage clamp pin type RTB
Easy, and safe wiring system

16 Points digital module
(20P Hirose Connector / 18P RTB)

"User Friendly Design, Outstanding Expansion, Easy Wiring, Space-Saving"

Easy system design with various I/O modules for any types of applications can be available.
I/O modules are mounted on the Din-Rail following the standard of 32 mm.
Removable Terminal Block (RTB) will help users to repair, and change I/O module for the system maintenance without new wiring.
63 I/O modules can be extended.
One single module can support 32 Points in same compact size of World's First.
each I/O module is very slim, and compact sizes of the space-saving.

World's First: 32 points I/O module

- Saving the installation space by using the Hirose 40 Pin connector
- Easy cable connection via the Hirose type terminal block
- Providing I/O LED to check the I/O status
- Providing the internal common (+/-) for the user convenience
- Saving the cost, and space to support more I/O points than the normal type (8, 16points)
- Easy maintenance with Removable Terminal Block
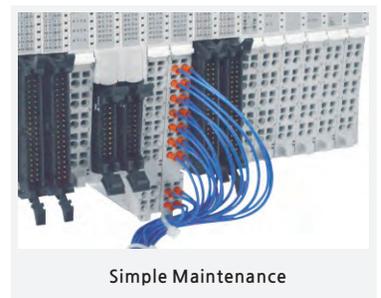- Universal type can choose NPN, or PNP depending on the wiring way

Easy Installation

User's Convenience

Removable Type, RTB

Simple Maintenance

FnIO G-Series

FnIO G-Series' network adapters comply with international standards.
DeviceNet, PROFIBUS, CC-Link, CANopen, EtherCAT, PROFINET,
MODBUS RS 485, MODBUS TCP/UDP, CC-Link IE, CC-Link IE Field Basic
G-Series are designed to meet users' communication specification.

Network adapter modules

	DeviceNet	PROFIBUS	CC-Link	CANopen	MODBUS RS485	CC-Link IE
	GN-9212	GN-9222	GN-9231	GN-9261	GN-9273	GN-9284
Communication Type	DeviceNet.	PROFI BUS	CC-Link	CANopen	MODBUS	CC-Link IE Field Basic
Max. Network Node	64 Nodes	125 Nodes	42 Nodes	99 Nodes	99 Nodes	64 Nodes
I/O Data size	Input : 512 Bytes Output : 512 Bytes	Input : 244 Bytes Output : 244 Bytes	System area : 16 pt RX/RY : 112 pt RWr/RWw : 16 pt	Input : 252 Bytes Output : 252 Bytes	Max 128 bytes each slot	RX/RY : 32 Bytes RWr/RWw : 256 Bytes
Baud rate	500M : 125 Kbps 250M : 250 Kbps 100M : 500 Kbps	9.6 K(1.2Km) ~ 12 Mbps(100m)	156/625/2500/ 5000/10000 Kbps	10 ~1000 Kbps (default 1000 Kbps)	1200 ~115200 bps	10/100 Mbps , Auto-negotiatation, Full duplex
Bus connection	5 Pin Open-Style Connector	9 Pin D-Sub Connector	5 Pin Open-Style Connector	5 Pin Open-Style Connector	5 Pin Open-Style Connector	2 x RJ-45
Dimension	54 mm x 99 mm x 70 mm					

	CC-Link IE	PROFINET	MODBUS TCP	MODBUS	EtherCAT	PROFINET
	GN-9285	GN-9287	GN-9289	GN-9372	GN-9386	GN-9587
Communication Type	CC-Link IE	PROFI NET	MODBUS	MODBUS	EtherCAT.	PROFI NET
Max. Network Node	120	Limited by EtherNet Spec.	Limited by EtherNet Spec.	Limited by EtherNet Spec.	65535	Limited by EtherNet Spec.
I/O Data size	RX/RY : 256 Bytes RWr/RWw : 1024 Bytes	Max 128 bytes each slot	Max 128 bytes each slot	Max 128 bytes each slot	Max 128 bytes each slot	Max 128 bytes each slot
Baud rate	1 Gbps, Full duplex	100 Mbps, Full duplex	10/100Mbps, Auto-negotiation, Full duplex	10/100 Mbps , Auto-negotiatation, Full duplex	100 Mbps	100 Mbps , Full duplex
Bus connection	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45	2 x RJ-45
Dimension	54 mm x 99 mm x 70 mm					

- Master Type : Programmable I/O, CODESYS V3.5.11.3 / IEC61131-3
- Slave Type : Most Major Fieldbus, and Industrial Ethernet Protocol Support
- Operation Temp : -20 to 60 ˚C
- Internal Bus : <1ms (128 Bytes)
- Max. Slots : 63 slots
- Housing : 18P Terminal Block, 20/40P Connector
- I/O Module : Universal Digital Input, 16 Bits & Differential type analog units
  Relay, TC/RTD, SSI, High Speed Counter and etc

ROHS II REACH CE UL FC KC
2015 / 863 / EU   EC NO. 190712006

ISO 14001:2004   ISO 9001:2008

G-Series Line up

Network Adapter Module

GN-9212	DeviceNet
GN-9222	PROFIBUS
GN-9231	CC-LINK
GN-9261	CANopen
GN-9273	MODBUS RS485
GN-9284	CC-LINK IE Field Basic
GN-9285	CC-LINK IE
GN-9287	PROFINET
GN-9289	MODBUS TCP/UDP
GN-9386	EtherCAT
GN-9587	PROFINET, MRP, FSU

Digital Input Module

GT-1238	8P, Universal, 24Vdc, 10RTB
GT-123F	16P, Universal, 24Vdc, 20P connector
GT-12DF	16P, Universal, 24Vdc, 18RTB
GT-12FA	32P, Universal, 24Vdc, 40P connector
GT-1804	4P, 120Vac, 10RTB
GT-1904	4P, 240Vac, 10RTB

Digital Output Module

GT-2318	8P, Sink, 24Vdc/0.5A, 10RTB
GT-2328	8P, Source, 24Vdc/0.5A, 10RTB
GT-221F	16P, Sink, 24Vdc/0.3A, 20P connector
GT-222F	16P, Source, 24Vdc/0.3A, 20P connector
GT-225F	16P, Sink, 24Vdc/0.3A, 18RTB
GT-226F	16P, Source, 24Vdc/0.3A, 18RTB
GT-22BA	32P, Sink, 24Vdc/0.3A, 40P connector
GT-22CA	32P, Source, 24Vdc/0.3A, 40P connector
GT-2618	8P, Sink, 24Vdc/2A, 10RTB
GT-2628	8P, Source, 24Vdc/2A, 10RTB
GT-2734	4P, MOS Relay, 240Vdc/ac, 0.5A, 10RTB
GT-2744	4P, Relay, 24Vdc/2A, 240Vac/2A, 10RTB
GT-2764	4P, MOS Relay, 24Vdc/ac, 2A, 10RTB
GT-2784	4P, MOS Relay, 110Vdc/ac, 1A, 10RTB

Special Module

GT-5102	2CH, Encoder, Input, 5Vdc, 10RTB
GT-5112	2CH, High speed counter, 24Vdc, 10RTB
GT-5211	1CH, RS 232, RTS/CTS, Full Duplex Type, 10RTB
GT-5212	2CH, RS 232, Full Duplex Type, 10RTB
GT-5221	1CH, RS 485, Full Duplex Type, 10RTB
GT-5231	1CH, RS 485, Half Duplex Type, 10RTB
GT-5232	2CH, RS 485, Half Duplex Type, 10RTB
GT-5352	2CH, Synchronous Serial Interface Input, 10RTB
GT-5521	1CH, Stepper Module (TBD)

Power Module (All ID Type)

GT-7408	Shield Module
GT-7508	Common for 0Vdc
GT-7511	Power Expansion, In 24Vdc, Out1A/5Vdc
GT-7518	Common for 24Vdc
GT-7588	Common for 0Vdc, 24Vdc
GT-7641	Field Power, 5/24/48Vdc, 110/220Vac

Programmable IO

MODEBUS TCP/RTU CODESYS V3.5.11.3 Web-server

GN-9371	Economic type
GN-9372	Standard type
GN-9373	Webvisu type

(Refer to 8P in detail)

Analog Input Module

GT-3001	LoadCell (TBD)
GT-3114	4CH, 0~20, 4~20mA, 12Bits, 10RTB
GT-3154	4CH, 0~20, 4~20mA, 16Bits, 10RTB
GT-3118	8CH, 0~20, 4~20mA, 12Bits, 10RTB
GT-3158	8CH, 0~20, 4~20mA, 16Bits, 10RTB
GT-311F	16CH, 0~20, 4~20mA, 12Bits, 20P Connector
GT-315F	16CH, 0~20, 4~20mA, 16Bits, 20P Connector
GT-317F	16CH, 0~20, 4~20mA, 12Bits, 18RTB
GT-319F	16CH, 0~20, 4~20mA, 16Bits, 18RTB
GT-3424	4CH, 0~10, 0~5, 1~5Vdc, 12Bits, 10RTB
GT-3464	4CH, 0~10, 0~5, 1~5Vdc, 16Bits, 10RTB
GT-3428	8CH, 0~10, 0~5, 1~5Vdc, 12Bits, 10RTB
GT-3468	8CH, 0~10, 0~5, 1~5Vdc, 16Bits, 10RTB
GT-342F	16CH, 0~10, 0~5, 1~5Vdc, 12Bits, 20P Connector
GT-346F	16CH, 0~10, 0~5, 1~5Vdc, 16Bits, 20P Connector
GT-347F	16CH, 0~10, 0~5, 1~5Vdc, 12Bits, 18RTB
GT-349F	16CH, 0~10, 0~5, 1~5Vdc, 16Bits, 18RTB
GT-3704	4CH, RTD, 10RTB
GT-3708	8CH, RTD, 20P Connector
GT-3804	4CH, Thermocouple, 10RTB
GT-3808	8CH, Thermocouple, 20P Connector
GT-3901	3Phase, AC Measurement, Lx-Ly 500Vac/1A
GT-3914	4CH, Differential, 0~20, 4~20, +/-20mA, 12Bits, 10RTB
GT-3934	4CH, Differential, 0~20, 4~20, +/-20mA, 16Bits, 10RTB
GT-3918	8CH, Differential, 0~20, 4~20, +/-20mA, 12Bits, 18RTB
GT-3938	8CH, Differential, 0~20, 4~20, +/-20mA, 16Bits, 18RTB
GT-3924	4CH, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 12Bits 10RTB
GT-3944	4CH, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 16Bits, 10RTB
GT-3928	8CH, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 12Bits, 18RTB
GT-3948	8CH, Differential, 0~5, 0~10, +/-5, +/-10Vdc, 16Bits, 18RTB

Analog Output Module

GT-4114	4CH, 0~20mA, 12Bits, 10RTB
GT-4154	4CH, 0~20mA, 16Bits, 10RTB
GT-4118	8CH, 0~20mA, 12Bits, 10RTB
GT-4158	8CH, 0~20mA, 16Bits, 10RTB
GT-4424	4CH, 0~10Vdc, 12Bits, 10RTB
GT-4464	4CH, 0~10Vdc, 16Bits, 10RTB
GT-4428	8CH, 0~10Vdc, 12Bits, 10RTB
GT-4468	8CH, 0~10Vdc, 16Bits, 10RTB
GT-442F	16CH, 0~10Vdc, 12Bits, 20P Connector
GT-446F	16CH, 0~10Vdc, 16Bits, 20P Connector
GT-447F	16CH, 0~10Vdc, 12Bits, 18RTB
GT-449F	16CH, 0~10Vdc, 16Bits, 18RTB

RTB Main Features

- Efficient in replacement / repair without removing existing wiring
- Simple wiring and maintenance with Cable Ring
- Easily removable with one-touch type
- I/O wiring possible without any equipment or extra work
- Excellent visual effect with laser marking
- Easy and safe wiring work with single end pin type
- Hirose header connector providing multi-contacts connection and simple wiring
- 10/18 RTB, and 20/40 Pin Hirose header connector

World's First : 32 points I/O module

Simple Maintenance

Cable Rings for wiring

Brighter LEDs

Designed for System Safety

- Line-up based on international standard protocol specifications possible to be connected regardless of PLC vendors (DeviceNet, CC-Link, CC-Link / IE, CC-Link Field Basic, PROFIBUS, PROFINET, CANopen, MODBUS RS485, MODBUS TCP, EtherCAT, EtherNet IP)
- Expandable up to 63 I/O slots
- Fast scan time: 1ms for 128 bytes of In/Out data size
- Certificated in a variety of the Industrial Standards (CE, FCC, UL, LVD, Reach, and RoHS)
- Compatible with all types of I/O modules and network adapters
- Excellent visual effect (LEDs showing the status of module, communication, power, and I/O)
- Different colored window labels with each module to be distinguished easily
- For the stable system configuration and shock protection, All I/O modules can be mounted on the Din Rail following the industry standard.
- World's First slice I/O type with 32 points Digital Input / Output Module to be able to save the installation space
- Cable Ring to arrange, and fix wires on the RTB
- Stable internal speed supported by users' demands
- Universal Input Module can choose NPN or PNP types
- I/O Guide Pro S/W Tool can help users to simulate I/O configurations easily regardless of the online or offline.

I/O Guide Pro: To help users' I/O configuration

ModBus TCP/IP	GN-9289 Modbus TCP/IP
ModBus RS 485	GN-9289 Modbus TCP/IP
ModBus RS 232	GN-9273 Modbus RS 485
	GN-9273 Modbus RS 485
	GN-9372 Programmable I/O
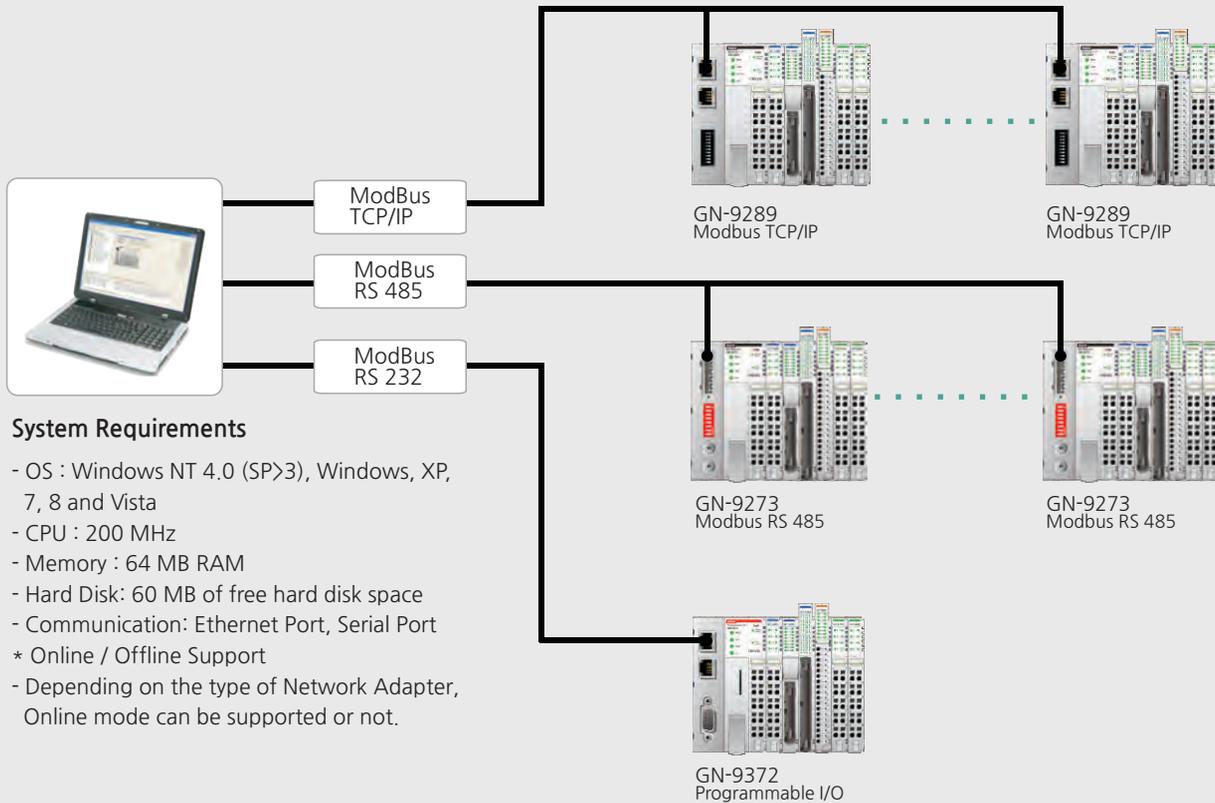
System Requirements

- OS : Windows NT 4.0 (SP>3), Windows, XP, 7, 8 and Vista
- CPU : 200 MHz
- Memory : 64 MB RAM
- Hard Disk: 60 MB of free hard disk space
- Communication: Ethernet Port, Serial Port
* Online / Offline Support
- Depending on the type of Network Adapter, Online mode can be supported or not.

Automatic scan

- MODBUS Protocol Available (Supporting the perfect communication)

Check validation

- Checking the system error

View Address Map

- Displaying input/output address map

Setup I/O Parameters

- Possible to change parameters of network adapters or I/O modules

Save As Project

- Save the new project by user's system configuration.

Documentation

- Possible to print the information on the selected project or Network Adapter, and to save it as a PDF or Excel file

CODESYS

CODESYS PLC

- PIO series, micro PLC for programming, can be compatible with FnIO series along with distributed IO modules.
- PIO has Dual Ethernet ports, and RS232/485 ports for external device expansion, and support 32bits control for the multi-tasking.
- MODBUS Serial's RTU can support the master, or slave type. MODBUS TCP can support the client, or server type.
- PIO series is compatible with FnIO series along with all type of I/O Modules, and can be expanded, and configured by any specification of your demands.
- PIO Series can work at CODESYS Version 3.5.11.3
- By using the CODESYS software tool, easy programming is available for users' system.
- IL, LD, FBD, ST, CFC program languages are supported by IEC 61131-3.
- Easy development for the application program by using the excellent distributed architectures.
- MODBUS protocol can be integrated with the upper different monitoring systems like SCADA.
- By using Web Visualization feature of CODESYS, users can monitor, and control their I/O system via the web browser.

Supporting CODESYS V3
Monitoring, and controlling on the web browser via the web visualization feature of CODESYS

Supporting the programming languages like LD, FBD, IL, ST, SFC based on IEC 61131-3.
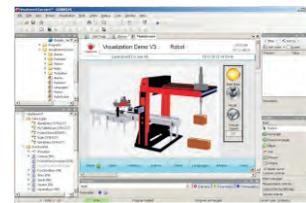
MODBUS TCP/IP

Supporting MODBUS TCP master or slave type
Supporting MODBUS RTU master or slave type
Connecting other industrial devices via an OPC server

	GN-9371	GN-9372	GN-9373
Program memory	512 KBytes	16 MBytes	
Data memory	96 Kbytes	16 Mbytes	
Max. data size (Input + Output)	Max 128 Bytes each slot		
Storage memory Retain Flag	4 KBytes 2 KBytes 2 KBytes	32 KBytes 16 KBytes 16 KBytes	
RTC	Retain Time : <1day Accuracy : <2min / month		
Max. I/O Expansion	63		
Web-Sever	Supporting (16 clients can be opened)		
OPC	Not supporting	DA supporting	
I/O Guide Pro	Modbus TCP		
File system	Not supporting	Supporting	
Break point	Not supporting	Supporting	
Webvisulization	Not supporting		supporting

CODESYS Software Specification

- Instruction List (**IL**)
- Structured Text (**ST**)
- Function Block Diagram (**FBD**)
- Ladder Diagram (**LD**)
- Sequential Function Chart (**SFC**)
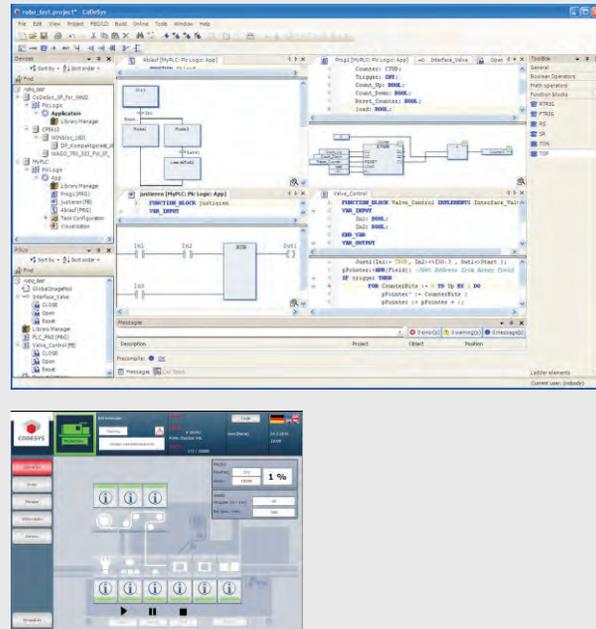
"Powerful Control System"

- CODESYS I/O Controller has big size of internal program memory areas, and a lot of commands that can help to execute complicated programs, and fast running.
- Optional programing for I/O control system is possible.
- CODESYS system is the best for the perfect automation, and energy management.
  - CODESYS V3.5.11.3
  - Up to 16 MB program memory
  - Up to 16 MB data memory
  - Up to 16 KB retain memory
  - Up to 63 I/O modules
  - OPC
  - Web server

"Optimized to speed, Memory and Function"

- Executing the program requiring the high-speed via the powerful CODESYS software platform.
- Providing bigger program, data, and retain memory size than the traditional small PLC
- PIO can help users to build much more complex control systems via CODSYS programming, and I/O control.
- PIO supports a lot of features of economic costs.

"Best hardware and Independent development tools"

- Superior online and offline programming and debugging
- OOP (Object-Oriented Programming)
- Integrated PLC Simulation
- Easy Configuration for Fieldbus system
- Development Environment (IDE) provides all features users need.
- Meeting all demands about the modern industrial automation for programming and visualization.

Documentation offered by your distributor

CREVIS. Co.,Ltd.