

Remote I/O System for Industrial Automation



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

PROFI
BUS

CANopen

MODBUS

EtherCAT

CC-Link IE

PROFI
NET

EtherNet/IP

CC-Link

CC-Link IE Field
Basic



ROHS II
2015 / 863 / EU

REACH
EC NO. 1907/2006



ISO 14001:2004

ISO 9001:2008





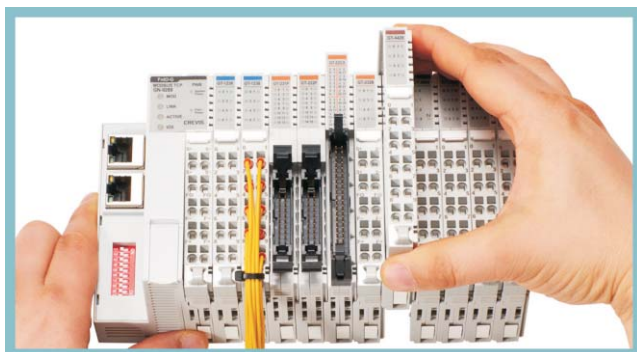
Various Fieldbus Protocol

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.



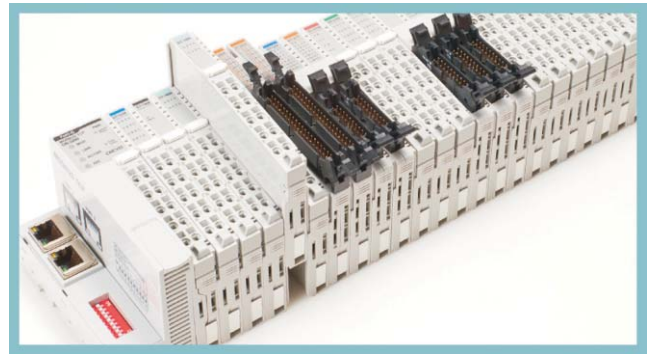
International Certificate

G-Series completed CE, UL, FCC, 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

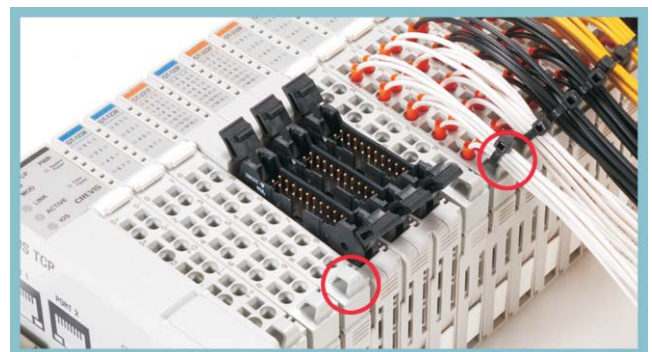
G-Series is the slice type for I/O connection, and extension, and has the removable terminal block for easy wiring.

So, user can repair, and change I/O module for the system maintenance without new wiring.



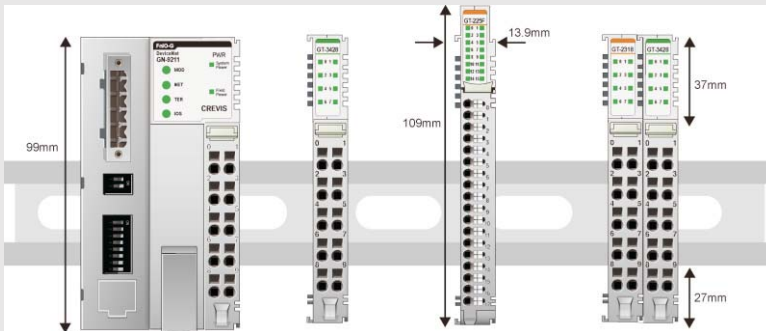
Various I/O Modules for Users' demands

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.

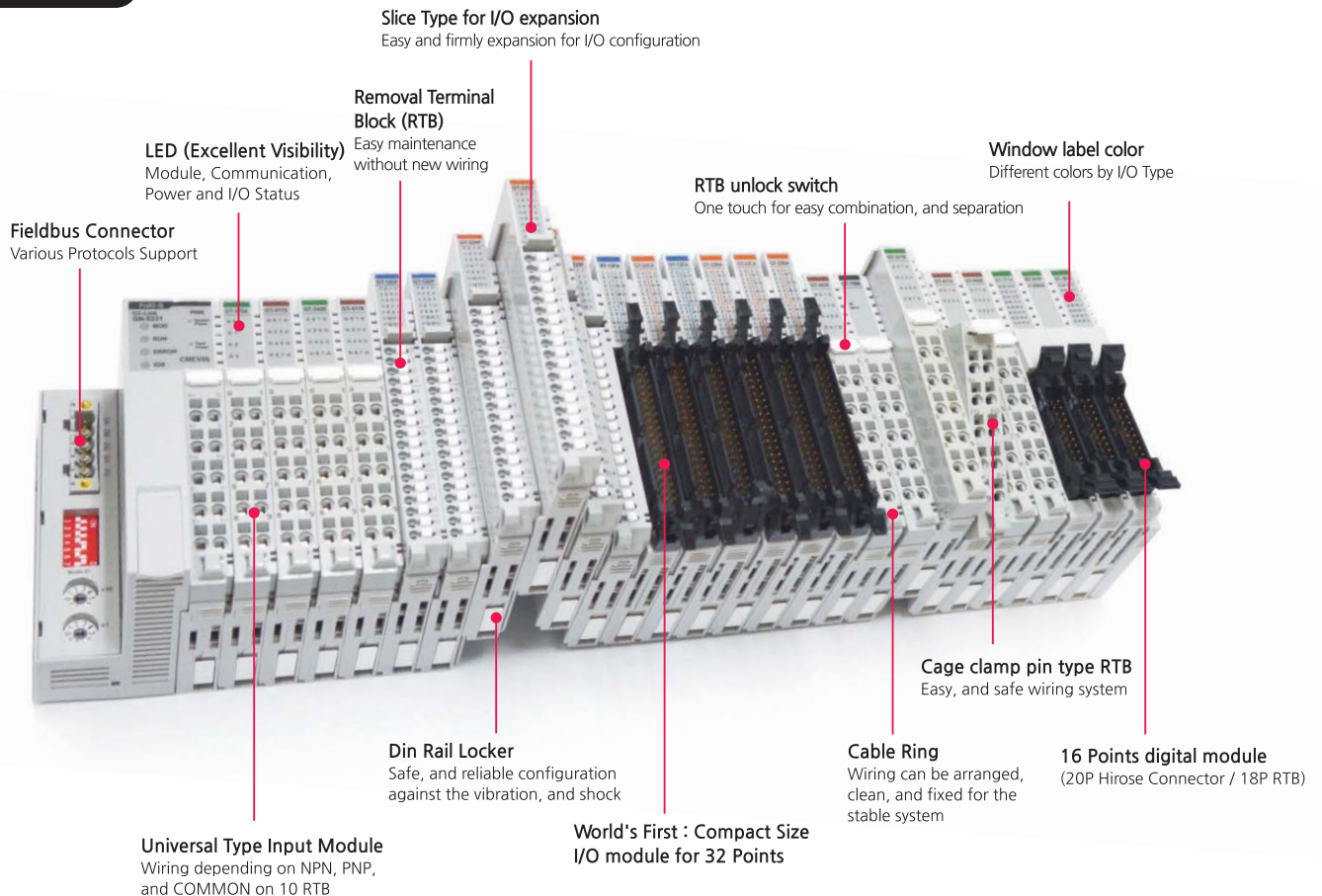


- * Internal Bus Speed: 1 ms (In / Out 128 bytes)
- * Module Expansion: 63 I/O Slots
- * Various Certificate Support by the International Industrial Standard

Space-Saving

- * Network Module (Width): 42mm
- * I/O Module (Width): 12mm

Features



“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



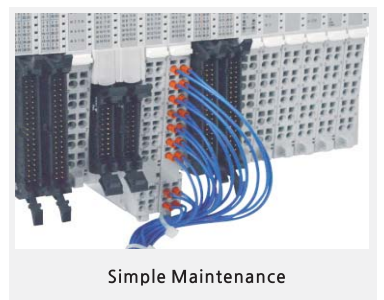
Easy Installation



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 GN-9212	PROFIBUS GN-9222	CC-Link GN-9231	CANopen GN-9261	MODBUS RS485 GN-9273	CC-Link IE GN-9284
Communication Type						
Max. Network Node	64 Nodes	125 Nodes	42 Nodes	99 Nodes	99 Nodes	Limited by Ethernet Spec.
I/O Data size	Max 128 bytes each slot	Input : 244 Bytes Output : 244 Bytes	System area : 16 pt RX/RX : 112 pt RWw/RWw : 16 pt	Input : 252 Bytes Output : 252 Bytes	Max 128 bytes each slot	RX/RX : 32 Bytes RWw/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-negotiation, 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 GN-9285	PROFINET GN-9287	MODBUS TCP GN-9289	MODBUS GN-9372	EtherCAT GN-9386	PROFINET GN-9587
Communication Type						
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/RX : 256 Bytes RWw/RWw : 1024 Bytes	Max 128 bytes each slot	Max 128 bytes each slot	Input : 126 Words Output 126 Words	Max 128 bytes each slot	128 Bytes
Baud rate	100 Mbps, Full duplex	100 Mbps, Full duplex	10/100Mbps, Auto-negotiation, Full duplex	10/100 Mbps , Auto-negotiation, Full duplex	100 Mbps	10/100 Mbps , Auto-negotiation, 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 V3.5.11.0 / 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



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/IP
- GN-9386 EtherCAT
- GN-9587 PROFINET, MRP, FSU



Programmable IO

- GN-9372 MODBUS TCP/Serial, CODESYS V3.5.11.0
SD Card, USB Drive, File System,
Break Point



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/0.5A, 18RTB
- GT-226F 16P, Source, 24Vdc/0.5A, 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-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, Out 1A/5Vdc
- GT-7518 Common for 24Vdc
- GT-7588 Common for 0Vdc, 24Vdc
- GT-7641 Field Power, 5/24/48Vdc, 110/220Vac



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 AC Measurement
- 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-417F 16CH, 0~20mA, 12Bits, 18RTB
- GT-419F 16CH, 0~20mA, 16Bits, 18RTB
- 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

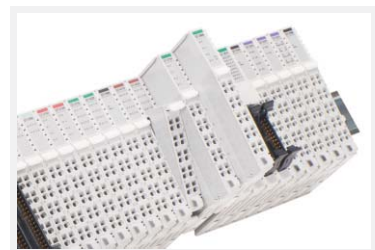


RTB Main Features

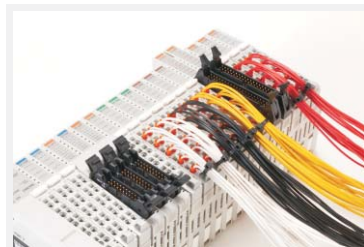
- Efficient in replacement / repair without removing existing wiring
- Simple wiring and maintenance with Cable Ring
- Easily removable with one-touch type
- I/O wiring possible without any equipment or extra work
- Excellent visual effect with laser marking
- Easy and safe wiring work with single end 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

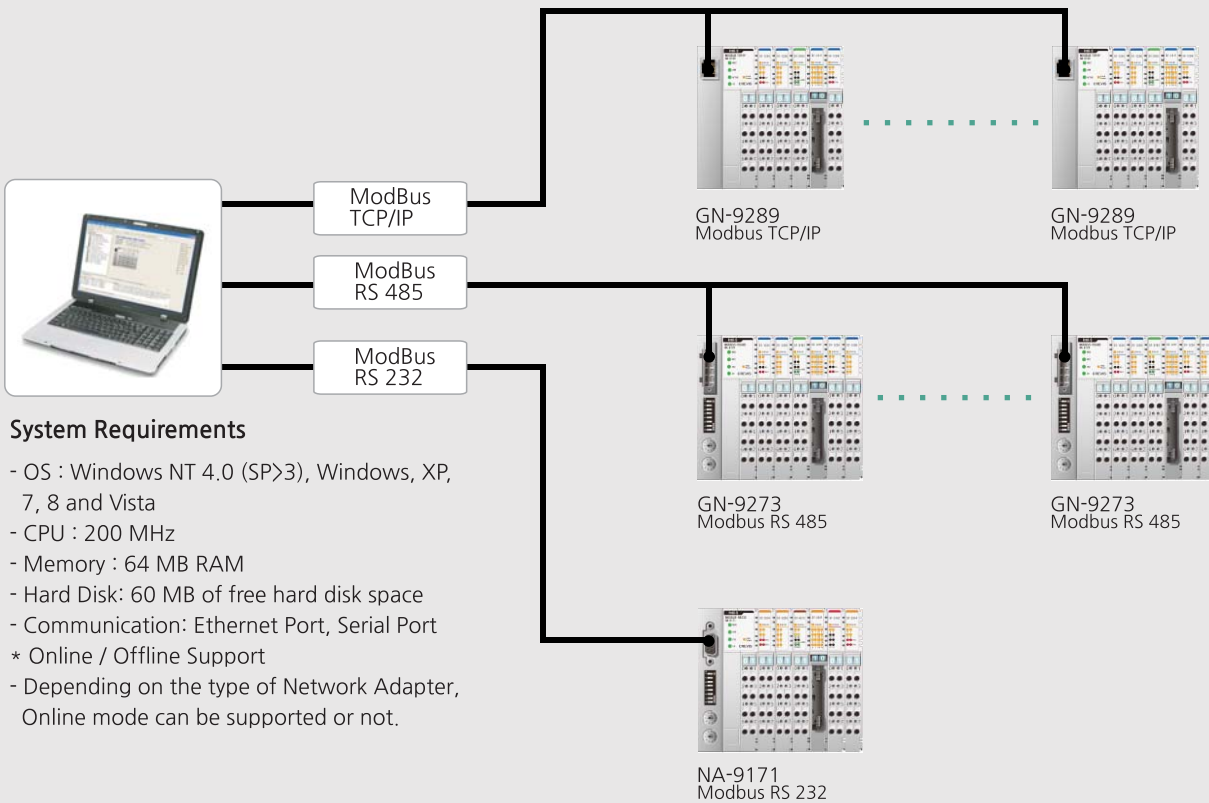


Brighter LEDs

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: 1 ms 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



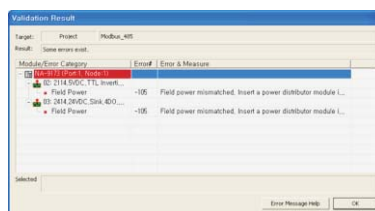
System Requirements

- 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)



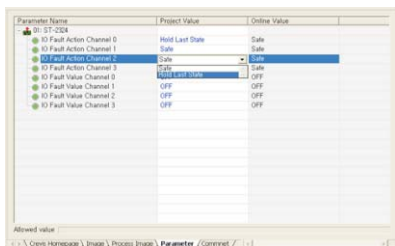
Check validation

- Checking the system error



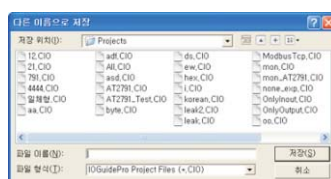
View Address Map

- Displaying input/output address map



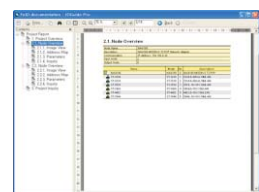
Setup I/O Parameters

- 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 PLC

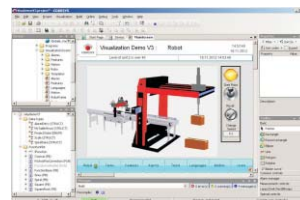
- PIO series, micro PLC for programming, can be compatible with FnIO series along with distributed IO modules.
- PIO has Dual Ethernet ports, and RS232/485 ports for external device expansion, and support 32bits control for the multi-tasking.
- MODBUS Serial's RTU can support the master, or slave type. 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.
- 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

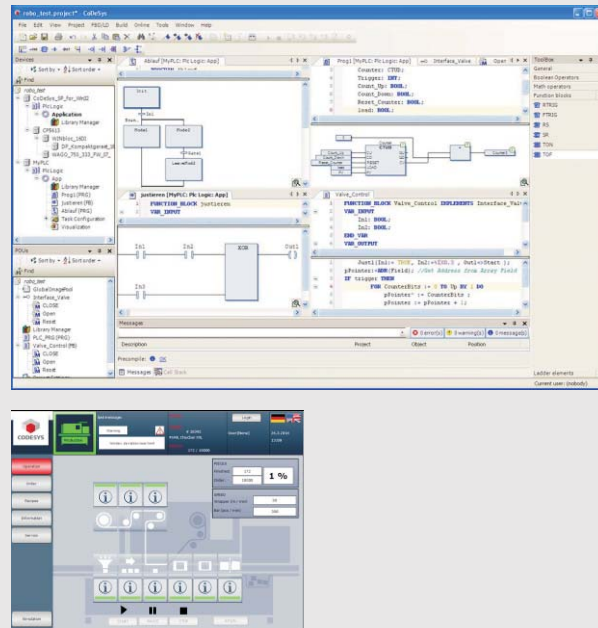


Supporting MODBUS TCP master or slave type
Supporting MODBUS RTU master or slave type
Connecting other industrial devices via an OPC server

	GN-9372
Program memory	16 MBytes
Data memory	16 Mbytes
Program data size	Input 4096 Kbytes / Output 4096 Kbytes
Storage memory	16 KBytes
Retain	8 KBytes
Flag	8 KBytes
RTC	6 days (TBD)
Max. I/O Expansion	63
Web-Sever	Support
OPC	DA Support
I/O Guide Pro	Modbus TCP
File system	Support
Break point	Support

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 programming for I/O control system is possible.
- CODESYS system is the best for the perfect automation, and energy management.
 - CODESYS V3.5.11.0
 - Up to 16 MB program memory
 - Up to 16 MB data memory
 - Up to 8 KB retain memory
 - Up to 63 I/O modules
 - OPC
 - Web server

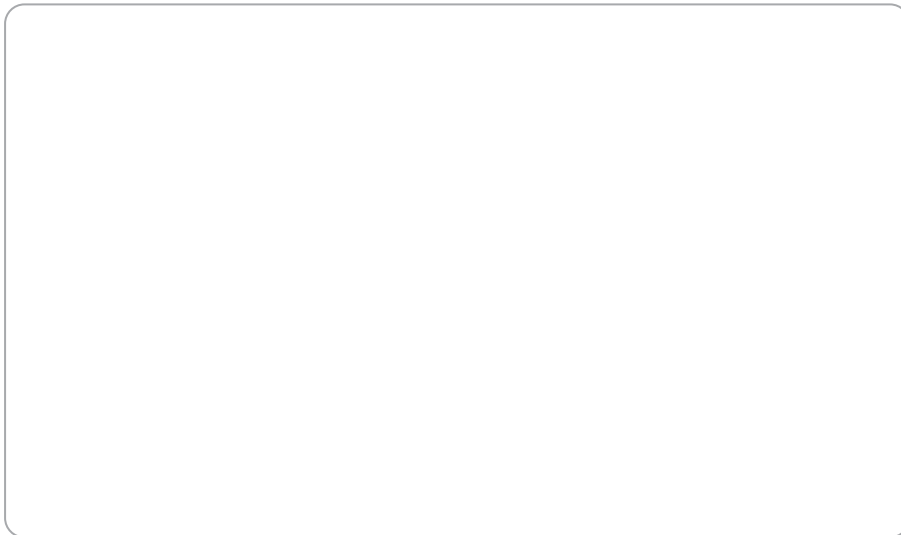
“Optimized to speed, Memory and Function”

- 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



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