



# FnIO G - Series

Get Smart Things for Industrial Automation



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**Network Adapter**

**GN/GL-9xxx**

MODBUS TCP, EtherNet IP, PROFINET, EtherCAT, CC-Link IE, CC-Link IE Field Basic, PROFIBUS, MODBUS RS485, CC-Link, DeviceNet, CANopen

**PIO**

GN/GL-9xxx  
MODBUS  
EtherCAT

**Digital Input**

GT-1xxx  
- DC: 8, 16, 32 ch  
- Diagnostic: In (Sink) + Out (Source)  
- AC: 4 ch

**Digital Output**

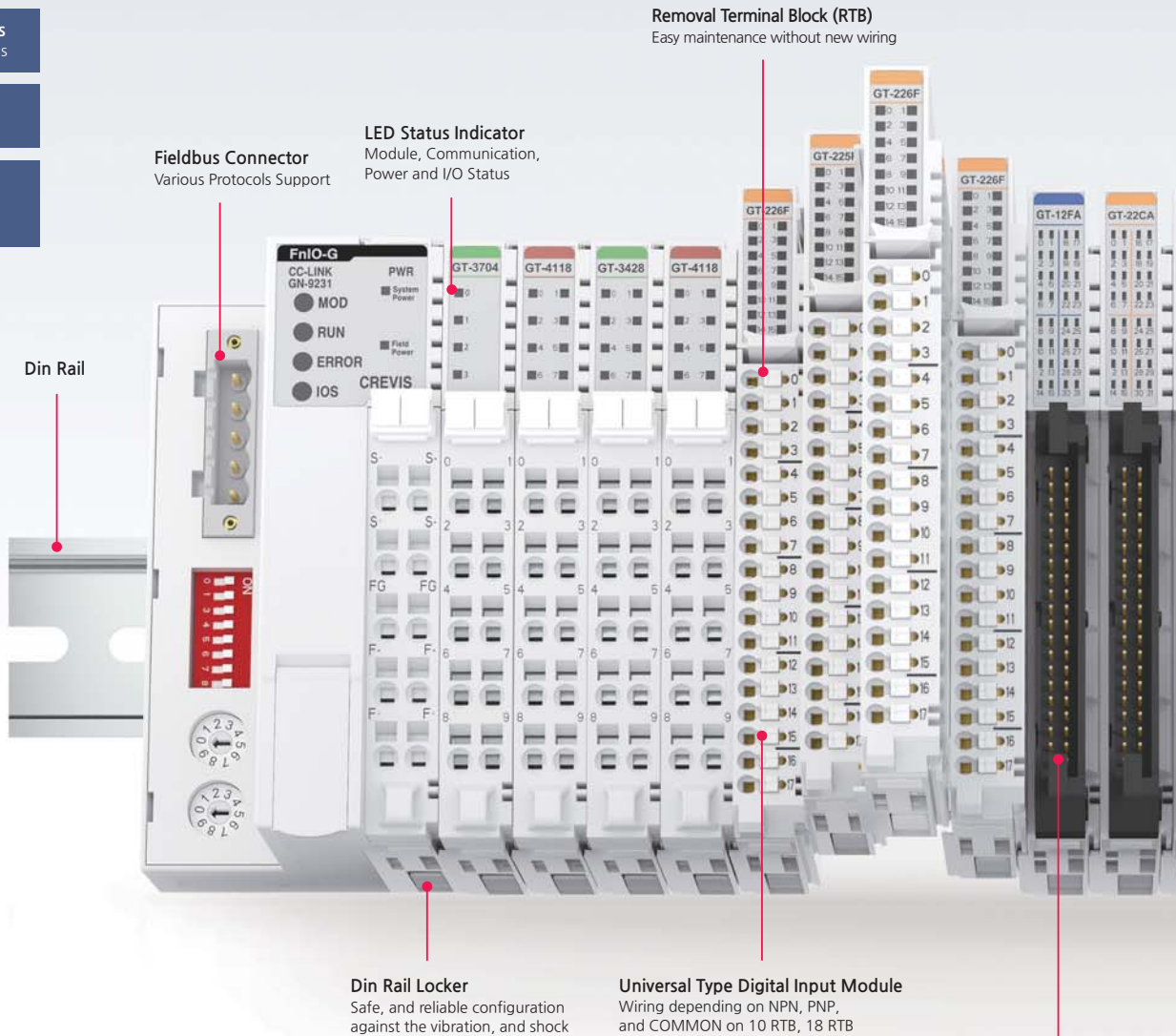
GT-2xxx  
- Sink: 8, 16, 32 ch  
- Source: 8, 16, 32 ch  
- Diagnostic: sink, source  
- Relay

**Various types of protocols**  
Over 10 protocols available

**Wide range of modules**  
More than 90 different I/Os

**Fast Internal Bus**  
<1ms (128 Bytes)

**Operating Temp**  
-20 to 60°C (UL)  
-40 to 70°C



**Removal Terminal Block (RTB)**  
Easy maintenance without new wiring

**Fieldbus Connector**  
Various Protocols Support

**LED Status Indicator**  
Module, Communication, Power and I/O Status

Din Rail

**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**

**Analog Input**

**GT-3xxx**

- Single Ended (Current): 4, 8, 16 ch
- Single Ended (Voltage): 4, 8, 16 ch
- Differential (Current/Voltage): 4, 8 ch
- Temperature Module (RTD/T.C.): 4, 8 ch
- AC Measurement
- Load cell

**Analog Output**

**GT-4xxx**

- Single Ended (Current): 4, 8 ch
- Single Ended (Voltage): 4, 8, 16 ch

**Special Module**

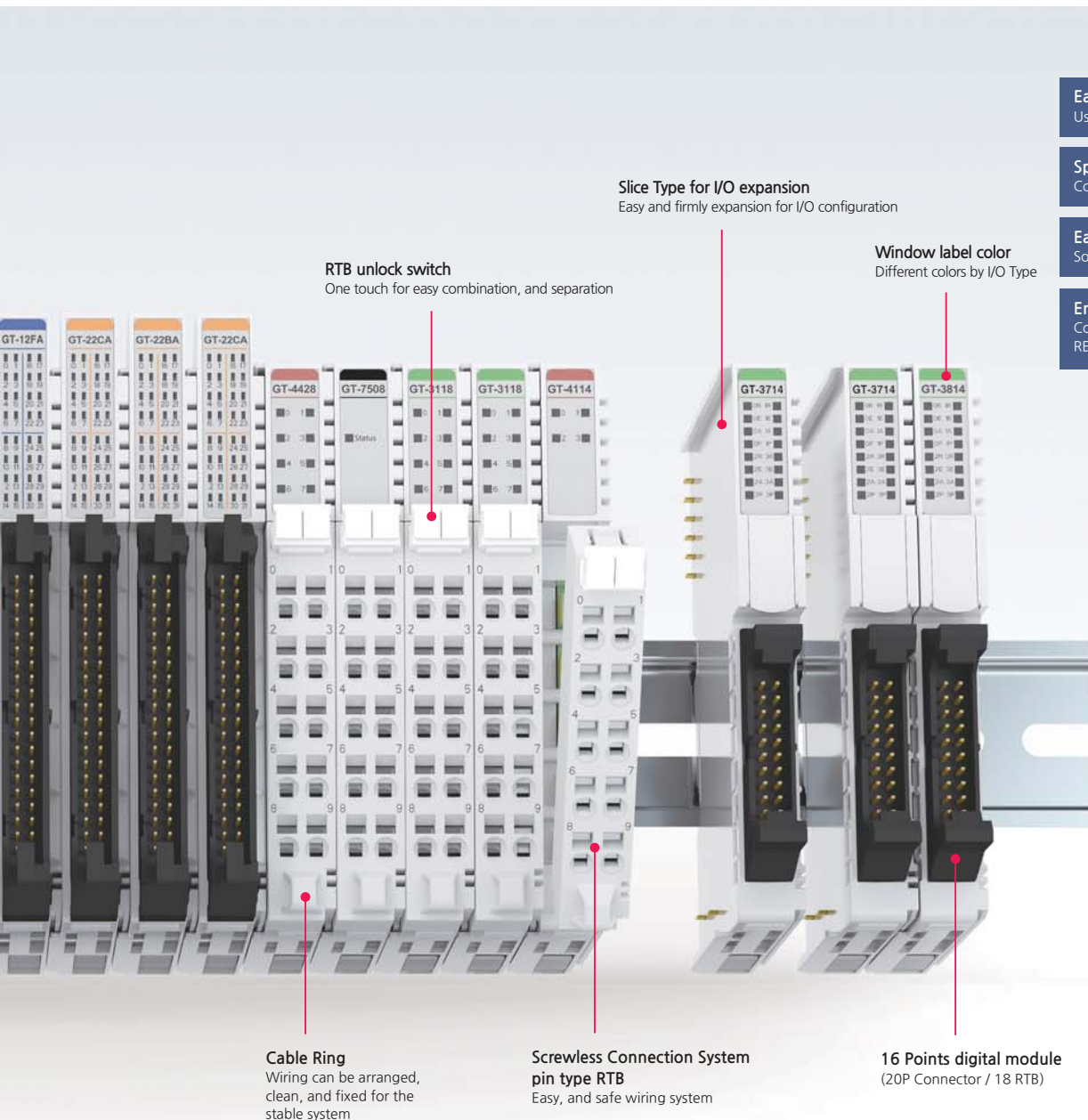
**GT-5xxx**

- Encoder
- Serial Interface
- Pulse
- Stepper

**Power Module**

**GT-7xxx**

- Shield
- Common: 0, 24 Vdc
- Expansion
- Field Power Distribution



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

**RTB unlock switch**  
One touch for easy combination, and separation

**Window label color**  
Different colors by I/O Type

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

**Screwless Connection System pin type RTB**  
Easy, and safe wiring system

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

- Easy Maintenance**  
User Friendly Design
- Space-Saving**  
Compact Size & Expendable Modules
- Easy Configuration**  
Software 'I/O Guide Pro'
- Environmental Compliance**  
Complying with RoHS3, China RoHS, REACH and WEEE

# I/O Guide Pro

To help users' I/O configuration

## Simple Software Tool for User Convenience

### Simulation

Enable to review configuration without modules via I/O Guide Pro  
Dimension, Power Consumption, Possibility of expansion

### Checking validation

Checking the system error and message

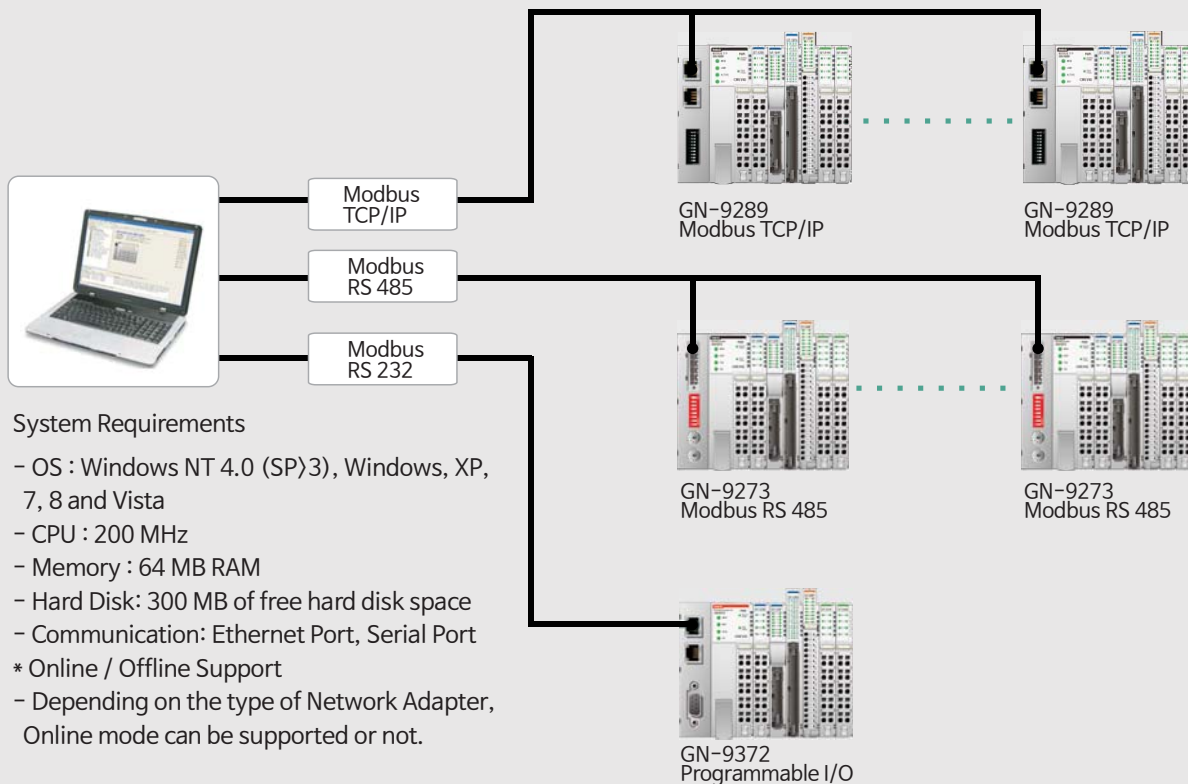


### Parameter setting and View Address Map

Enable to change parameters of modules easily  
Displaying input/output address map

### BOOTP Server and Automatic Scan

IP setting and connecting communication online without a master  
\* Online - MODBUS protocol available





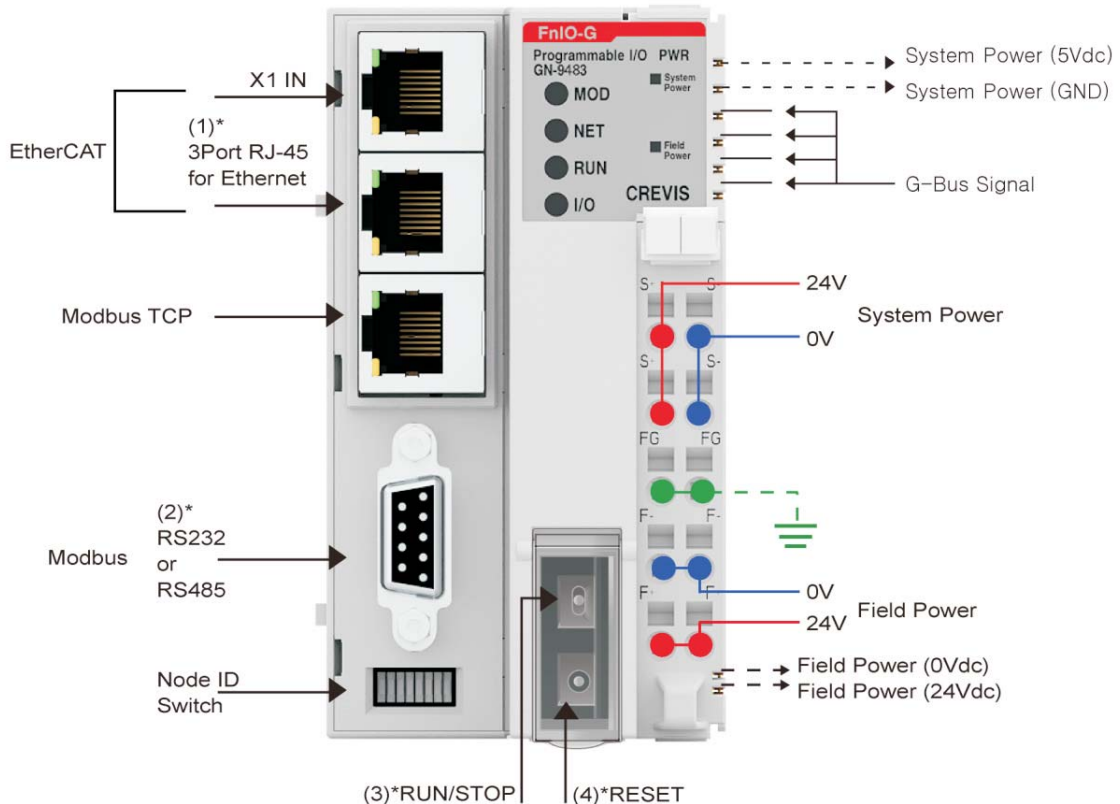
NEW

# Programmable I/O (EtherCAT/MODBUS)



Programmable I/O (CODESYS Version 3.5.11.3)		GN-9481	GN-9482	GN-9483
Memory	Program Memory	512 Kbytes		16 Mbytes
	Data Memory	96 Kbytes		16 Mbytes
	Non Volatile Memory	2 Kbytes		16 Kbytes
Program Languages / Run Time System / RTC		IEC 61131-3 (LD, IL, ST, FBD, SFC, CFC) / Multiple PLC Tasks / Retain Time : 15 days		
OPC Server (DA), Online Change, Breakpoint, Source Up/Download, File Transmit		Not supporting	supporting	
Webvisualization		Not Supporting		supporting
Process Time		1usec (90 Instructions)	7usec (90 Instructions)	
Max. Task / Max. Cycle Task / Max. Status Task		10		
Controller Type *(Master, Slave)		Modbus TCP/UDP, Modbus RTU *(Master/Slave) EtherCAT *(Slave)		
Protocol		EtherCAT Protocol / Ethernet Protocol (Modbus/TCP, Modbus/UDP), SNMP HTTP (Webvisualization, Web-Server), DHCP/BOOTP / Serial Protocol (Modbus RTU)		
Max. Node / Max. I/O Expansion / I/O Data Size		Limited by EtherCAT / Ethernet specification / 63 Slots / Max 128Byte each slot		
Baud Rate		Ethernet (10/100 Mbps) / EtherCAT (100 Mbps) / Modbus RTU (2400~115200 bps)		
Connector Type		3 x RJ-45		
System & Field Power / Power Dissipation / Current for IO Module		Supply voltage : 24Vdc (15~32Vdc) / 110mA typical @ 24Vdc / 1.5A @5Vdc		
Dimensions		54mm x 99mm x 70mm		

## Wiring Diagram

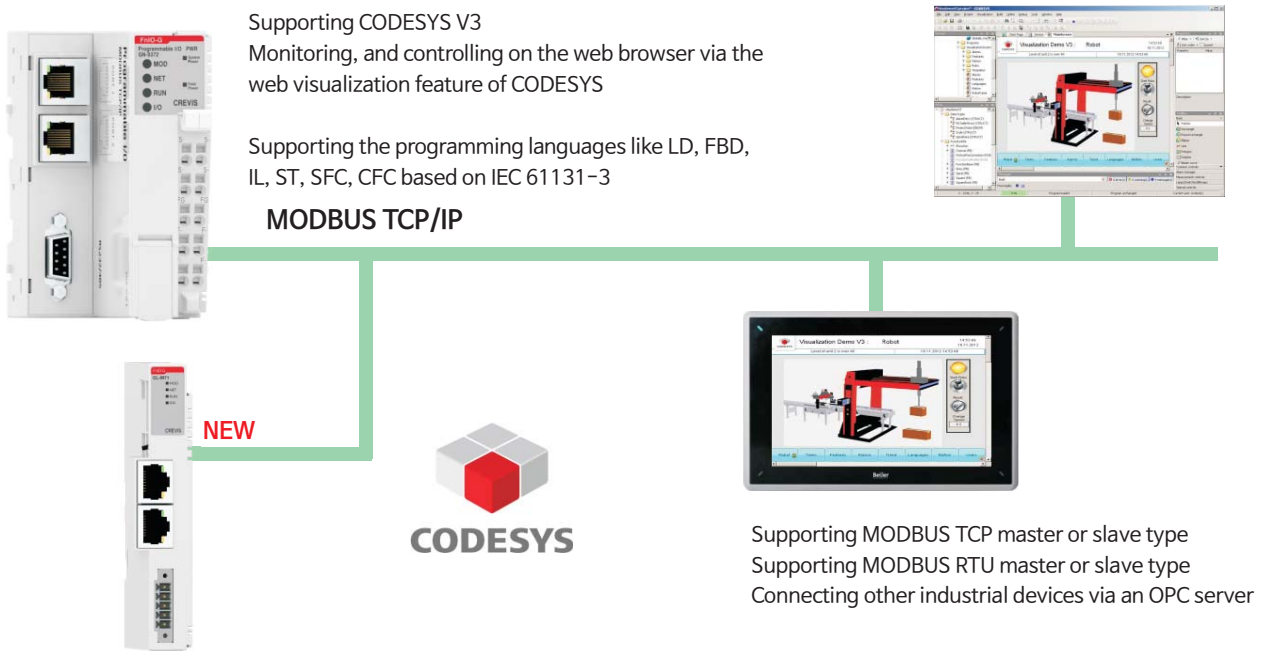


# Programmable I/O (MODBUS)



Programmable I/O (CODESYS Version 3.5.11.3)		GL-9971	GN-9371	GN-9372	GN-9373
Memory	Program Memory	256 Kbytes	512 Kbytes	16 Mbytes	
	Data Memory	40 Kbytes	96 Kbytes	16 Mbytes	
	Non Volatile Memory	4 Kbytes	-	32 Kbytes	
Program Languages / Run Time System / RTC		IEC 61131-3 (LD, IL, ST, FBD, SFC, CFC) / Multiple PLC Tasks / Retain Time : 15 days			
OPC Server (DA), Online Change, Breakpoint, Source Up/Download, File Transmit		Not supporting		supporting	
Webvisualization		Not Supporting			supporting
Process Time		TBD	1usec (90 Instructions)	7usec (90 Instructions)	
Max. Task / Max. Cycle Task / Max. Status Task		10			
Controller Type *(Master, Slave)		Modbus TCP/UDP *(Slave)		Modbus TCP/UDP Modbus RTU *(Master/Slave)	
Protocol		Ethernet Protocol (Modbus/TCP, Modbus/UDP), SNTP HTTP (Web-Server), DHCP/BOOTP		Ethernet Protocol (Modbus/TCP, Modbus/UDP), SNTP HTTP (Webvisualization, Web-Server), DHCP/BOOTP / Serial Protocol (Modbus RTU)	
Max. Node / Max. I/O Expansion / I/O Data Size		Limited by EtherCAT/Etherent specification / 63 Slots (GN-937X), 8 Slots (TBD) (GL-9971) / Max 128Byte each slot			
Baud Rate		Ethernet (10/100 Mbps)		Ethernet (10/100 Mbps) / Modbus RTU (2400~115200 bps)	
Connector Type		2 x RJ-45			
System & Field Power / Power Dissipation / Current for IO Module		TBD		Supply voltage : 24Vdc (15~32Vdc) / 110mA typical @ 24Vdc / 1.5A @5Vdc	
Dimensions		22mm x 109mm x 70mm		54mm x 99mm x 70mm	

## CODESYS PLC



# Network Adapter

Network Adapter	GN-9212	GN-9222	GN-9261	GN-9273	GN-9231
Protocol	DeviceNet	PROFIBUS	CANopen	MODBUS RS485	CC-Link
Max. Node	64 Nodes	125 Nodes	99 Nodes		42 Nodes
Max. I/O Expansion	63 Slots				
I/O Data Size	Max 128 bytes each slot	Input : 244 bytes Output : 244 bytes	Input : 252 bytes Output : 252 bytes	Max 128 bytes each slot	System area : 16 Point RX/Ry : 112 points (4 Station occupied) RWr/RWw : 16 points (4 Station occupied)
Baud Rate	125Kbps (Max. 500m) 250Kbps (Max. 250m) 500Kbps (Max. 100m)	9.6K(1.2Km) ~ 12Mbps(100m)	10, 20, 50, 100, 125, 250, 500, 800, 1000 Kbps (default 1000Kbps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200bps	156/625/2500/5000/ 10000 Kbps
Connector Type	5 Pin Open-Style	9 Pin D-Sub	5 Pin Open-Style		
Power Dissipation	70mA @ 24Vdc	100mA @ 24Vdc	70mA @ 24Vdc		
Protection	Min. 1.5A				
Current for I/O Module	1.5A @ 5Vdc				
System/ Field Power	24Vdc nominal (15~32Vdc) / 24Vdc typical (Max. 32Vdc) Refer to IO Module's Specification				
Dimensions	54mm x 99mm x 70mm				

Network Adapter	GN-9284	GN-9285	GN-9386	GN-9287	GN-9587	GN-9289
Protocol	CC-Link IE Field Basic	CC-Link IE	EtherCAT (ID Type)	PROFINET	PROFINET, MRP, FSU	MODBUS TCP, Ethernet IP
Max. Node	64 Nodes	120 Nodes	65,535 Nodes	Limited by Profinet Spec.		Limited by Ethernet Spec.
Max. I/O Expansion	32 Slots	63 Slots		32 Slots	63 Slots	
I/O Data Size	RX/Ry : 32 bytes each (4 Station occupied) RWr/RWw : 256 bytes each (4 Station occupied)	Max 128 bytes each slot		Max 1440 bytes	TBD	Max 128 bytes each slot
Baud Rate	10/100 Mbps, Full duplex	1 Gbps, Full duplex	100 Mbps	100 Mbps, Full duplex	10/100 Mbps, Full duplex	100 Mbps, Full duplex
Connector Type	2 x RJ-45					
Power Dissipation	70mA @ 24Vdc	140mA @ 24Vdc	70mA @ 24Vdc		TBD	70mA @ 24Vdc
Protection	Min. 1.5A					
Current for I/O Module	1.5A @ 5Vdc					
System/ Field Power	24Vdc nominal (15~32Vdc) / 24Vdc typical (Max. 32Vdc) Refer to IO Module's Specification					
Dimensions	54mm x 99mm x 70mm					

Network Adapter	GL-9089	GL-9087	GL-9084	GL-9073
Protocol	MODBUS TCP, Ethernet IP	PROFINET	CC-Link IE Field Basic	MODBUS RTU
Max. Node	Limited by Ethernet Spec.	Limited by Ethernet Spec.	64 Nodes	99 Nodes
Max. I/O Expansion	8 Slots (TBD)			
I/O Data Size	Max 128 bytes each slot			
Baud Rate	10/100Mbps, Full duplex	100Mbps, Full duplex	10/100Mbps, Full duplex	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200bps
Connector Type	2 x RJ-45			
Power Dissipation	TBD			
Protection	TBD			
Current for I/O Module	1A @ 5Vdc			
System/ Field Power	24Vdc nominal (15~27.6Vdc) / 24Vdc typical (15~32Vdc) Refer to IO Module's Specification			
Dimensions	22mm x 109mm x 70mm			

\* **Caution** - System Power and Field Power must be sepearted

\* **Note** - Product specifications, terms and offerings are subject to change without notice.

# Remote I/O

Digital Input						
DC	Channel	Type	Voltage	Signal Delay (OFF to ON/ ON to OFF)	Power Dissipation	Connector
GT-1238	8	Universal	24 Vdc	0.3ms/ 0.3ms	35 mA	10 RTB
GT-123F	16			0.3ms/ 0.3ms	50 mA	20P Connector
GT-12DF	16			0.3ms/ 0.3ms	50 mA	18 RTB
GT-12FA	32			0.2ms/ 0.2ms	55 mA	40P Connector
GT-1428	In (8) / Out (8)			In (Sink) / Out(Source) - Diagnostic	In: 3.0ms/ 3.0ms Out: 0.1ms/ 0.35ms	55 mA
AC	Channel	Type	Voltage	Signal Delay (OFF to ON/ ON to OFF)	Power Dissipation	Connector
GT-1804	4	AC Input Terminal	120 Vac	30mS/ 130mS	30 mA	10 RTB
GT-1904	4		240 Vac	30mS/ 140mS	30 mA	10 RTB

Digital Output						
Sink	Channel	Type	Voltage	Signal Delay (OFF to ON/ ON to OFF)	Power Dissipation	Connector
GT-2318	8	Sink	24 Vdc	0.3ms/ 0.3ms	45 mA	10 RTB
GT-221F	16			0.5mS/ 0.5ms	50 mA	20P Connector
GT-225F	16			0.3mS/ 0.5ms	50 mA	18 RTB
GT-22BA	32			0.3mS/ 0.5ms	65 mA	40P Connector
GT-2618	8			0.3ms/ 0.3ms	50 mA	10 RTB
GT-2418	8	Sink - Diagnostic	24 Vdc	0.3ms/ 0.35ms	50 mA	18 RTB
Source	Channel	Type	Voltage	Signal Delay (OFF to ON/ ON to OFF)	Power Dissipation	Connector
GT-2328	8	Source	24 Vdc	0.3ms/ 0.3ms	40 mA	10 RTB
GT-222F	16				50 mA	20P Connector
GT-226F	16				50 mA	18 RTB
GT-2628	8				45 mA	10 RTB
GT-22CA	32			0.3ms/ 0.5ms	65 mA	40P Connector
GT-2428	8	Source - Diagnostic	24 Vdc	0.5ms/ 0.5ms	35 mA	18 RTB
Relay	Channel	Type	Voltage	Signal Delay (OFF to ON/ ON to OFF)	Power Dissipation	Connector
GT-2734	4	MOS Relay (Solid State)	240 Vac/240 Vdc	0.6ms/ 3ms	80 mA	10 RTB
GT-2744	4	Relay Output (Form A, SPST)	0~32 Vdc/48 Vdc/ 110 Vdc/240 Vac	5ms/ 8 ~ 15ms	35 mA	
GT-2764	4	MOS Relay (Solid State)	24 Vac / 24 Vdc	1 ms/ 3 ~ 3.5ms	80 mA	
GT-2784	4	MOS Relay (Solid State)	110 Vac/110 Vdc	1 ~ 1.5ms/ 3 ms	80 mA	

Analog Input						
Single Ended	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-3114	4	Current	0~20, 4~20 mA	12 Bits	25 mA	10 RTB
GT-3154	4			16 Bits	25 mA	10 RTB
GT-3118	8			12 Bits	30 mA	10 RTB
GT-3158	8			16 Bits	30 mA	10 RTB
GT-311F	16			12 Bits	30 mA	20P Connector
GT-315F	16			16 Bits	30 mA	20P Connector
GT-317F	16			12 Bits	200 mA	18 RTB
GT-319F	16			16 Bits	200 mA	18 RTB
Single Ended	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-3424	4	Voltage	0~10, 0~5, 1~5Vdc	12 Bits	25 mA	10 RTB
GT-3464	4			16 Bits	25 mA	10 RTB
GT-3428	8			12 Bits	30 mA	10 RTB
GT-3468	8			16 Bits	30 mA	10 RTB
GT-342F	16			12 Bits	30 mA	20P Connector
GT-346F	16			16 Bits	30 mA	20P Connector
GT-347F	16			12 Bits	210 mA	18 RTB
GT-349F	16			16 Bits	210 mA	18 RTB
Temperature	Channel	Type	Sensor Type	Accuracy	Power Dissipation	Connector
GT-3704	4	RTD	PT50,PT100,PT200,PT500,PT1000, JPT50,JPT100,JPT200,JPT500,JPT1000, NI100,NI120,NI200,NI500,NI1000, NI1000LG	± 0.1%@25°C ± 0.3%@-40~70°C	130 mA	10 RTB
GT-3708	8			120 mA	20P Connector	
GT-3804	4	T.C (Thermocouple)	Type K/J/T/B/R/S/E/N/L/U/C/D, 10uV/1uV/2uV	± 0.1%@25°C ± 0.3%@-40~70°C	130 mA	10 RTB
GT-3808	8				150 mA	20P Connector



Differential	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-3914	4	Current	0~20, 4~20, -20~20 mA	12 Bits	30 mA	10 RTB
GT-3934	4			16 Bits	30 mA	10 RTB
GT-3918	8			12 Bits	200 mA	18 RTB
GT-3938	8			16 Bits	200 mA	18 RTB
GT-3924	4	Voltage	0~5, 0~10, -5~5, -10~10 Vdc	12 Bits	30 mA	10 RTB
GT-3944	4			16 Bits	30 mA	10 RTB
GT-3928	8			12 Bits	200 mA	18 RTB
GT-3948	8			16 Bits	200 mA	18 RTB
AC Measurement	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-3901	1	AC Measurement	VLN = 288VAC, VLL = 500VAC	24 Bits	125 mA	10 RTB
LoadCell	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-3002	2	Strain Gauge	-150~150 mV	24 Bits	TBD	18 RTB

#### Analog Output

Single Ended	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-4114	4	Current	0~20 mA	12 Bits	30 mA	10 RTB
GT-4154	4			16 Bits		
GT-4118	8			12 Bits		
GT-4158	8			16 Bits		
GT-4214	4		4~20 mA	12 Bits		
GT-4254	4			16 Bits		
GT-4218	8			12 Bits		
GT-4258	8			16 Bits		
Single Ended	Channel	Type	Range	Resolution	Power Dissipation	Connector
GT-4424	4	Voltage	0~10 Vdc	12 Bits	30 mA	10 RTB
GT-4464	4			16 Bits		
GT-4428	8			12 Bits		
GT-4468	8			16 Bits		
GT-442F	16			12 Bits		
GT-446F	16			16 Bits		
GT-447F	16		12 Bits	20P Connector		
GT-449F	16		16 Bits	20P Connector		
GT-4524	4		-10~10 Vdc	12 Bits	TBD	18 RTB
GT-4524	4					18 RTB

#### Special Module

Encoder	Channel	Type	Voltage	Frequency (Encoder)	Power Dissipation	Connector
GT-5102	2	High Speed Counter	5 Vdc	0 ~ 600 KHz	70 mA	10 RTB
GT-5112	2		24 Vdc	0 ~ 600 KHz	65 mA	
GT-5114	4		24 Vdc	0 ~ 100 KHz	65 mA	
Serial Interface	Channel	Type	Voltage	Signal Delay	Power Dissipation	Connector
GT-5211	1	RS-232, RTS/CTS	-18 ~ 18 V	TxD, RxD, Full Duplex	85 mA	10 RTB
GT-5212	2	RS-232				
GT-5221	1	RS-422	-	TxD, RxD, Half Duplex		
GT-5231	1	RS-485				
GT-5232	2	RS-485			60 mA	
GT-5352	2	Synchronous		-		
Pulse	Channel	Type	Voltage	Current	Power Dissipation	Connector
GT-5442	2	PWM	24 Vdc	Source	TBD	10 RTB
GT-5444	4	PWM			70 mA	
GT-5624	2	Pulse Output			TBD	
Stepper	Channel	Type	Voltage	Mode	Power Dissipation	Connector
GT-5521	1	2-Phase Bipolar Motor (Max. 16 microstepping)	24 Vdc	Instant Command, Position Table, Position (absolute/relative), Set Point Change, etc.	100 mA	10 RTB

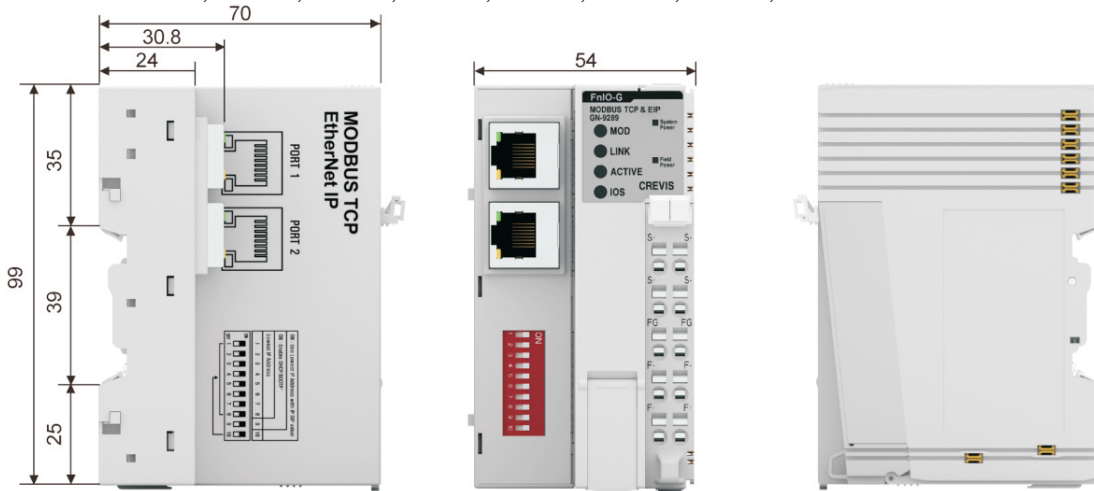
#### Power Module

Power	Type	Voltage	Power Dissipation	Connector
GT-7408	Shield	24 Vdc	30 mA	10 RTB
GT-7508	Common for 0 Vdc		30 mA	
GT-7511	Expansion		20 mA	
GT-7518	Common for 24 Vdc		30 mA	
GT-7588	Common for 0Vdc, 24 Vdc		30 mA	
GT-7641	Field Power Distribution		30 mA	

# Dimension

## Network Adapter

**Model :** GN-9212, GN-9222, GN-9261, GN-9273, GN-9231, GN-9284, GN-9285, GN-9386, GN-9287, GN-9587, GN-9289, GN-9371, GN-9372, GN-9373, GN-9481, GN-9482, GN-9483

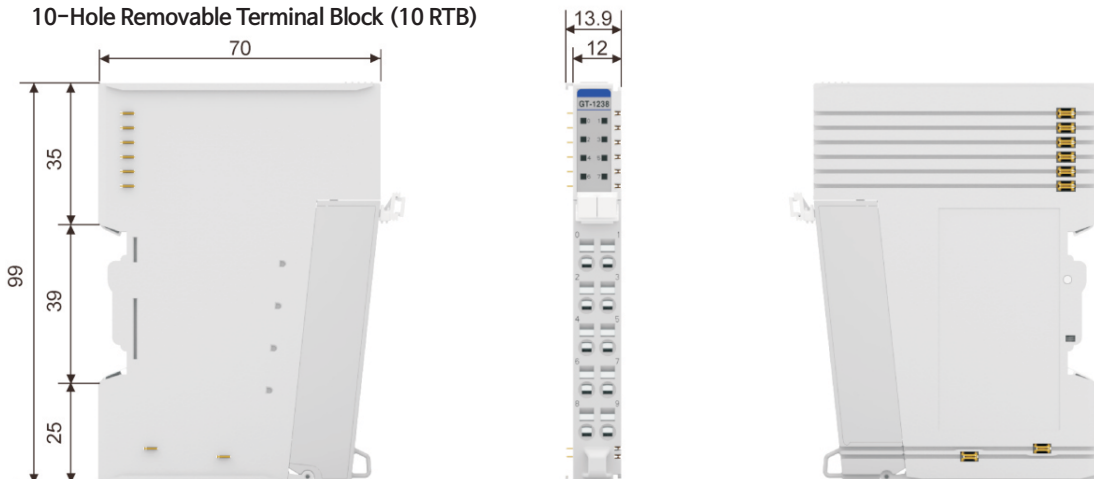


**Model :** GL-9971, GL-9089, GL-9087, GL-9084, GL-9073

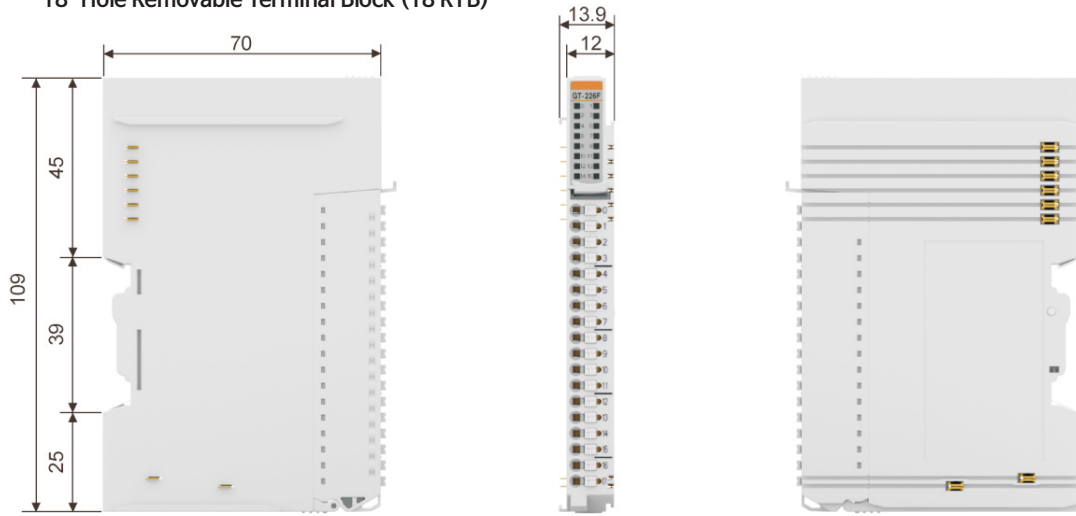


## I/O

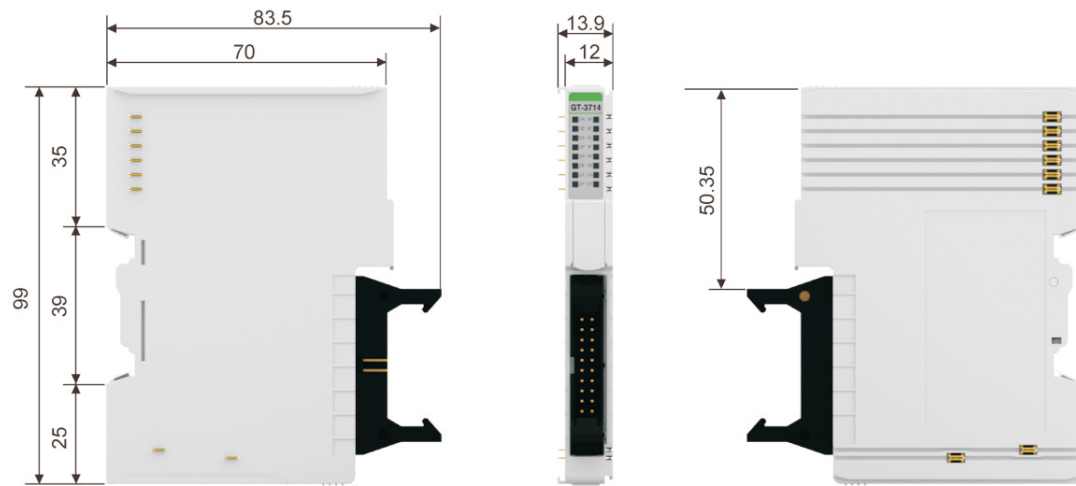
**10-Hole Removable Terminal Block (10 RTB)**



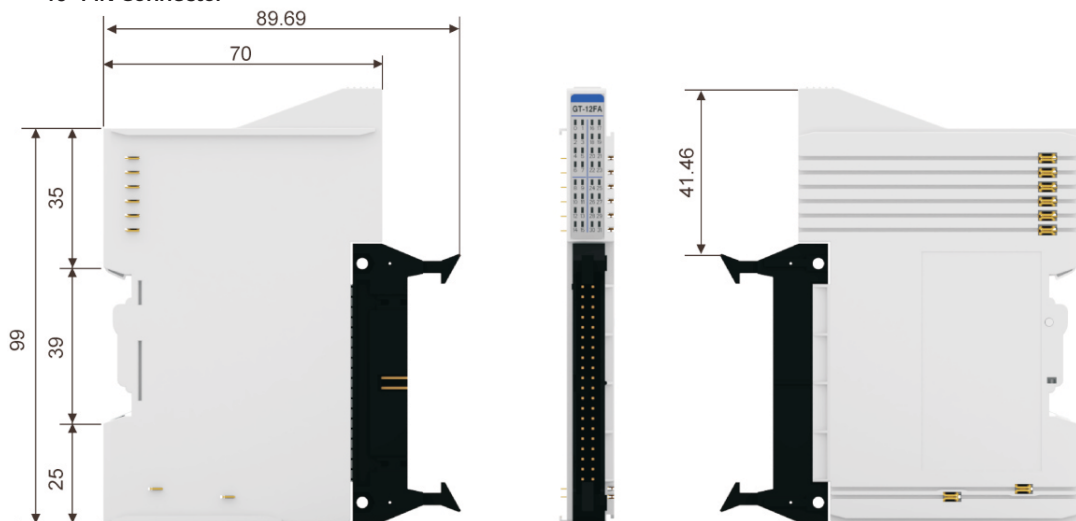
**18-Hole Removable Terminal Block (18 RTB)**



**20-PIN Connector**



**40-PIN Connector**



Documentation offered by your distributor

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*Power of Automation*

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