

GG-6 GATEWAY MODULE MANUAL

Introduction

This manual is for the GG6-GE and GG6-GR Gateway Modules. It includes Installation, Set-up, Configuration and Troubleshooting instructions for all of the different variants.

NOTE

If your Gateway Module is already installed in the GG-6, skip to the **GENERAL SET-UP** section below.

Installation

1. Remove the Unitronix EX-A2X Expansion Adapter, and the upper right backboard screw from the GG-6.





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2. Place the GG-6 Gateway where the Expansion Adapter was located and loosely attach the upper right screw.

3. Re-install the Expansion Adapter, tighten all screws, and re-connect the power and communication cables.



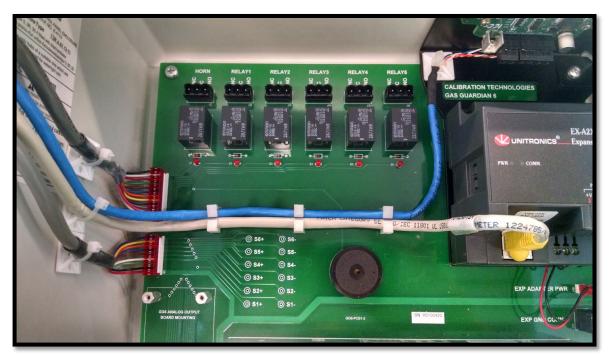




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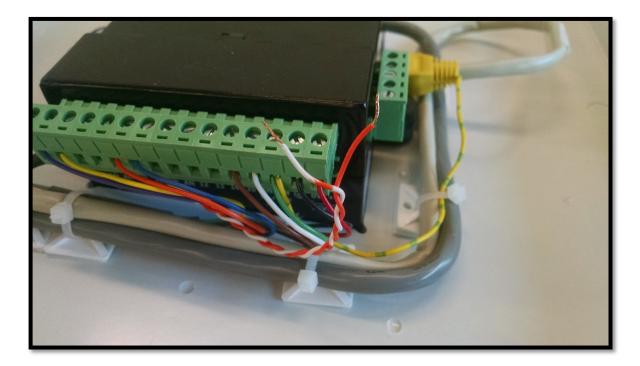
4. Cut the zip ties along the Expansion Adapter communication cable, and install the new communication/power cable alongside the Expansion Adapter cable.



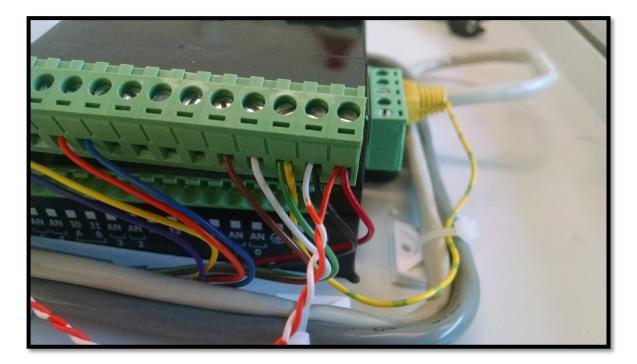




5. Run the power cable (Orange, White/Orange pair) up to the top connector on the GG-6 PLC.



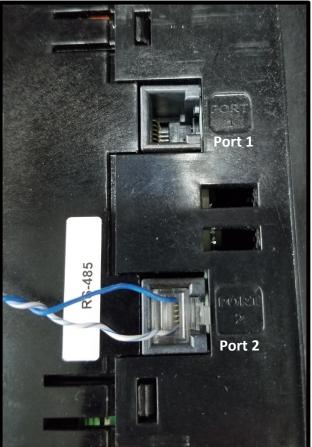
6. Double up the Orange wire with the Red wire in the first terminal position on the PLC. Double up the White/Orange wire with the Black wire in the second terminal position.



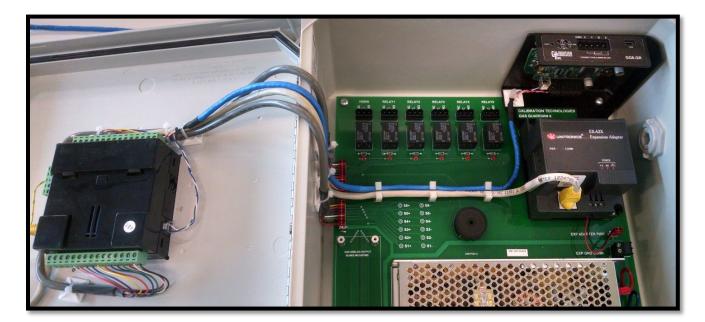


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7. Plug the Blue, White/Blue pair of wires with the RJ-11 connector into Port 2 (the RS-485 port) on the PLC.



8. Reinstall any zip ties that were removed.





General Set Up

Power up the GG-6 and check the GG-6 MODBUS Configuration (see GG-6 Manual for menu navigation):

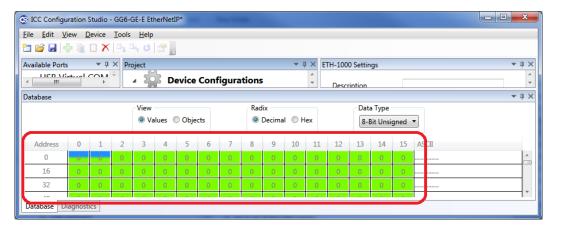
ID (64 to 127): 64 Master/Slave: Slave Display: Main

Download and install the ICC Configuration Studio SW ver 2.0.3.7 on a PC, running Win 7 or higher. The computer will need a spare USB Port. The program can be found on the CTI website at <u>https://www.ctiengineering.com/Downloads</u>. Scroll down to the **Tools** section at the bottom of the page and download **ICC Configuration Studio V2.0.3.7 Installer**. Un-Zip the file and install the program.

Run the ICC Configuration Studio program. **Do not upgrade** to a newer version of ICC Configuration Studio.

Connect the GG-6 Gateway Module to the computer using the mini-USB cable.

Check for data activity in Database.



Once connected, the Online Devices should show one new device under the Device Configurations.

Online Devices

Select the Online Devices, and select the Discovered Devices tab. Double click on the ETH-1000 (for the GG6-GE-x) or the XLTR-1000 (for the GG6-GR-x), and select the Project tab.

Right click on ETH-1000 or XLTR-1000 and select Upload Configuration.

CAUTION Do not change any parameters, other than directed, within the GG-6 Gateway Module or you may compromise the performance and safety of the GG-6.



GG6-GE-E Configuration

Select the Ethernet tab on the uploaded ETH-1000 configuration.

Project	→ † ×	Ethernet Settings	-	ųΧ		
Device Cor	nfigurations	Authentication				
⊿ 🤏 ETH-1000		User Name	cti			
▶ Ethernet		Password	5861			
▷ RS-485		Network Configuration				
at Ponline Dev	vices	IP Settings	Static •			
		IP Address	192.168.1.100			
		Subnet Mask	255.255.255.0			
		Default Gateway	192.168.1.1			

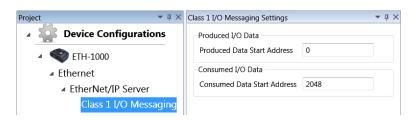
From this tab the IP Settings can be changed from Static to DHCP. In the Static mode, the IP Address, the Subnet Mask and the Default Gateway can be set.

Select the EtherNet/IP Server tab on the uploaded ETH-1000 configuration.

Project	- † ×	EtherNet/IP Server Settings	•	џ	Х
Device Configura	ntions	Device Name	GG6-GE-E		
4 🧠 ETH-1000		Connection Timeout Options			
▲ Ethernet		Invoke Timeout When Run/Idle Flag = Idle			
EtherNet/IP Serv	er				
Class 1 I/O M	essaging				

From this tab the Device Name and Connection Timeout Options can be set.

Do not change anything on or below the Class 1 I/O Messaging tab.



Once all of the changes have been made, right click on uploaded ETH-1000 configuration and select Download Configuration. Answer Yes to overwriting the configuration. Remove the mini-USB cable and close the program.



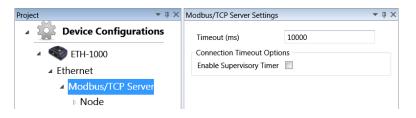
GG6-GE-M Configuration

Select the Ethernet tab on the uploaded ETH-1000 configuration.

Project 🔹 🕂 🗙	Ethernet Settings	<u>≁</u>
Device Configurations	Authentication —	
▲ 🤏 ETH-1000	User Name	cti
▶ <mark>Ethernet</mark>	Password	5861
▷ RS-485	Network Configur	ation
	IP Settings	Static 🔹
	IP Address	192.168.1.100
	Subnet Mask	255.255.255.0
	Default Gateway	192.168.1.1

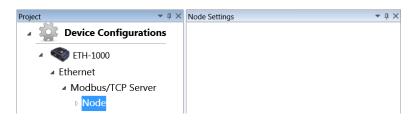
From this tab the IP Settings can be changed from Static to DHCP. In the Static mode, the IP Address, the Subnet Mask and the Default Gateway can be set.

Select the Modbus/TCP Server tab on the uploaded ETH-1000 configuration.



From this tab the Timeout and Connection Timeout Options can be set.

Do not change anything below the Node tab.



Once all of the changes have been made, right click on uploaded ETH-1000 configuration and select Download Configuration. Answer Yes to overwriting the configuration. Remove the mini-USB cable and close the program.



GG6-GE-B Configuration

Select the Ethernet tab on the uploaded ETH-1000 configuration.

Project 🔹 🖡 🗙	Ethernet Settings	~ ↓ ×				
Device Configurations	Authentication —					
4 🤏 ETH-1000	User Name	cti				
▶ Ethernet	Password	5861				
▷ RS-485	Network Configuration					
	IP Settings	Static 🔹				
	IP Address	192.168.1.100				
	Subnet Mask	255.255.255.0				
	Default Gateway	192.168.1.1				

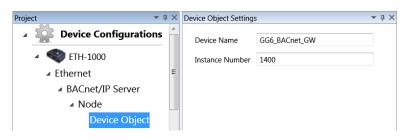
From this tab the IP Settings can be changed from Static to DHCP. In the Static mode, the IP Address, the Subnet Mask and the Default Gateway can be set.

Select the BACnet/IP Server tab on the uploaded ETH-1000 configuration.

Project	• ‡ ×	BACnet/IP Server Settings		▼ ↓ ×
Device Configuration	ons 🗂	UDP Port	47808	
4 🤏 ETH-1000		APDU Timeout (ms)	1000	
Ethernet	=	Number of APDU Retries	3	
BACnet/IP Server			5	
⊿ Node				
Device Object				

From this tab the UDP Port, APDU Timeout and the Number of APDU Retries can be set.

Select the Device Object tab under the Node tab on the uploaded ETH-1000 configuration.



From this tab the Device Name and the Instance Number can be changed.

Do not change anything below the Device Object tab.

Once all of the changes have been made, right click on uploaded ETH-1000 configuration and select Download Configuration. Answer Yes to overwriting the configuration. Remove the mini-USB cable and close the program.



GG6-GR-M Configuration

Select the Modbus RTU Slave tab on the uploaded XLTR-1000 configuration.

Project 🔹 🕂 🗙	Modbus RTU Slave Settin	gs
Device Configurations	Baud Rate	9600 💌
4 💜 XLTR-1000	Parity	No Parity (1 Stop Bit)
⊿ RS-485 A	Timeout (ms)	500
Modbus RTU Slave	Response Delay (ms)	500
Node	Response beidy (ms)	500

From this tab the Baud Rate, Parity, Timeout and Response Delay can be set to match the RS-485 network.

Select the Node tab on the on the uploaded XLTR-1000 configuration.

Project 👻 🖣 🗙	Node Setting	S	Ŧ	ц,	×
Device Configurations	Address	65			
🔺 < XLTR-1000					
⊿ RS-485 A					
Modbus RTU Slave					
⊳ <mark>Node</mark>					

From this tab the Modbus Address can be set.

Do not change anything below the Node tab.

Once all of the changes have been made, right click on uploaded XLTR-1000 configuration and select Download Configuration. Answer Yes to overwriting the configuration. Remove the mini-USB cable and close the program.



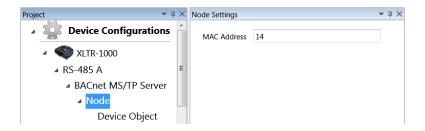
GG6-GR-B Configuration

Select the BACnet MS/TP Server tab on the uploaded XLTR-1000 configuration.

Project 🗸	ιx	BACnet MS/TP S	erver Settings	-	ļ	ιx
Device Configurations		Baud Rate	9600	•		
4 🔍 XLTR-1000		Parity	No Parity (1 Stop Bit)	Ŧ		
⊿ RS-485 A	Ξ	Max Master	127			
BACnet MS/TP Server						
⊿ Node						
Device Object						

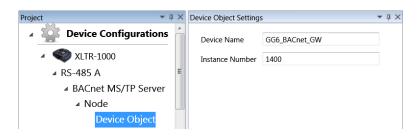
From this tab the Baud Rate, Parity and Max Master can be set to match the RS-485 network.

Select the Node tab on the on the uploaded XLTR-1000 configuration.



From this tab the MAC Address can be set.

Select the Device Object tab on the uploaded XLTR-1000 configuration.



From this tab the Device Name and the Instance Number can be set.

Do not change anything below the Device Object tab.

Once all of the changes have been made, right click on uploaded XLTR -1000 configuration and select Download Configuration. Answer Yes to overwriting the configuration. Remove the mini-USB cable and close the program.



Troubleshooting

Download the appropriate Help Manual from the ICC Configuration Studio.

Help >> Help Manuals >> *select from table below*:

GG6-GE-E	ETH-1000 >> EtherNet/IP Server Driver Manual
GG6-GE-M	ETH-1000 >> Modbus/TCP Server Driver Manual
GG6-GE-B	ETH-1000 >> BACnet/IP Server Driver Manual
GG6-GR-M	XLTR-1000 >> Modbus RTU Slave Driver Manual
GG6-GR-B	XLTR-1000 >> BACnet MS/TP Server Driver Manual

Check the MODBUS Configuration on the GG-6.

With the USB cable connected, check for data activity in Database section of the ICC Configuration Studio.



GG6-GE-E Register Map

If connecting to a ControlLogix PLC (such as a 1756-L61) coupled with a 1756-ENBT/A comm interface, using a Class 1 (I/O) connection, follow the example in Sec 1.5.2 starting on pg 8 of the "EtherNet/IP Server Driver Manual" (see pg. 12 above for help finding the Driver Manual).

On pg 9, step 4, your "Module Properties" (Figure 5) screen should look like this:

Module Properties Report: EIP (ETHERNET-MOD	DULE 1.1)
General* Connection Module Info	
Type: ETHERNET-MODULE Generic Ethern	net Module
Vendor: Allen-Bradley	
Parent: EIP	
Name: GG6GE	Connection Parameters
Description:	Assembly Instance: Size:
Descrigiton.	Input: 150 132 🚔 16-bit)
×	0 <u>u</u> tput: 100 2 😴 (16-bit)
Comm <u>F</u> ormat Data - INT	Configuration: 1 0 🚔 (8-bit)
Address / Host Name	
IP <u>A</u> ddress: 192 . 168 . 16 . 100	Status Input:
O <u>H</u> ost Name:	Status Output:
Status: Offline OK	Cancel Apply Help

Be sure to set:

- Input Assembly Instance to **150**.
- Input Size to **132**.
- Output Assembly Instance to **100**.
- Configuration Size to **0**.
- Comm Format to **Data-INT** (16 bit).

On pg 11, step 8, your "Controller Tags for I/O Access" (Figure 9) screen look like this:

Controller Tags - EIP_Example(controller)							×	
Scope: 🛐 EIP_Example 🗸	She	ow: All Tags			✓ 🗣 Enter Name Filter			~
Name 📑		Value 🔸	Force Mask 💦 🔦 🗲	Style	Data Type	Description	^	P
±-GG6GE:C		{}	{}		AB:ETHERNET_MODULE:C:0			
GG6GE:I		{}	{}		AB:ETHERNET_MODULE_INT_264Bytes			Properties
+ GG6GE:I.Data		{}	{}	Decimal	INT[132]			ertii
GG6GE:0		{}	{}		AB:ETHERNET_MODULE_INT_4Bytes:0:0			S
🛨 - GG6GE:0.Data		{}	{}	Decimal	INT[2]			
Monitor Tags Edit Ta	ags /			<		>		

Be sure the Data Type for GG6GE:I.Data is INT[132].



The Data Map is shown in the table below.

Description	DB Address	Data Type	Starting Data Address	Num of Elements
Signal Data (1,2)	0	16-Bit Unsigned	.Data[0]	30
Fault Discretes (3)	60	16-Bit Unsigned	.Data[30]	2
Warn Discretes (3)	64	16-Bit Unsigned	.Data[32]	2
Alarm1 Discretes (3)	68	16-Bit Unsigned	.Data[34]	2
Alarm2 Discretes (3)	72	16-Bit Unsigned	.Data[36]	2
Relay Discretes (3)	76	16-Bit Unsigned	.Data[38]	2
STEL Data (2)	100	16-Bit Unsigned	.Data[50]	30
STEL Discretes (3)	160	16-Bit Unsigned	.Data[80]	2
TWA Data (2)	200	16-Bit Unsigned	.Data[100]	30
TWA Discretes (3)	260	16-Bit Unsigned	.Data[130]	2

Notes: (1) Signal data from Sensor channels.

- (2) Data represents values displayed on the GG-6. If the range is less than 10 then the signal needs to be divided by 100. If the range is greater than or equal to 10 and less than 100 then the signal needs to be divided by 10.
- (3) 30 discretes are packed into two 16 bit words.

Alternately, the GG6-GE-E Gateway Module can be registered using an EtherNet/IP EDS file, which can be downloaded from <u>https://ctigas.com/tools/</u> ETH-1000 EDS V2.1.zip. Unzip the file to a directory that you can find later.

Before you begin, open the RSLogix5000/Studio5000, navigate to Tool->EDS Hardware Installation Tool, browse to the location of the EDS file and register the EDS file.

Rockwell Automation's EDS Wizard		×			
Registration Electronic Data Sheet file(s) will be added to your system for use in Rockwell Automation applications.					
Register a single file					
C Register a directory of EDS files	Look in subfolders				
<u>N</u> amed:		_			
C:\ETH-1000.EDS	Browse				
* If there is an icon file (ico) with t then this image will be associated	he same name as the file(s) you are registering with the device.	9			
	To perform an installation test on the file(s), c	lick Next			
	< <u>B</u> ack <u>N</u> ext >	Cancel			

Follow the example in Sec 1.5.2 starting on pg 8 of the "EtherNet/IP Server Driver Manual".



On pg 9, step 3, choose Module: "ETH-1000", Vendor: "Industrial Control Communications, Inc.", in the Select Module dialog box and click "OK".

From the New Module window, click the "Change" button to change the input and output data sizes.

📧 New Module	>	<
General* Conne	action Module Info Internet Protocol Port Configuration	
Туре:	ETH-1000 ETH-1000	
Vendor:	Industrial Control Communication, Inc.	
Parent:	EIP	
Na <u>m</u> e:	GG6GE Ethernet Address	
Description:	○ P <u>r</u> ivate Network: 192.168.1.	
	● IP Address: 192 . 168 . 16 . 100	
	⊖ <u>H</u> ost Name:	
	<u> </u>	
Module Defini	tion	
Revision:	2.1	
Electronic Ke	ying: Compatible Module	
Connections:	Generic VO	
	Change	
Status: Creating	OK Cancel <u>H</u> elp	

From the Module Definition window, set the following:

- Input Size to **132**.
- Output Size to 1.
- Format to INT.

I Module Definition	on*	×
<u>R</u> evision:	2 ∨ 1 🐳	
Electronic <u>K</u> eying:	Compatible Module	
Connections:		
Name	Size	
Generic VO	V Input: 132 Output: 1	
		_
ОК	Cancel Help	



GG6-GE-M Register Map

Description	Start Register	Number of Registers	Entity Address	Data Type
Signal Data (1,2)	30001	30	0	16-Bit Unsigned
Fault Discretes (3)	30061	2	60	16-Bit Unsigned
Warn Discretes (3)	30065	2	64	16-Bit Unsigned
Alarm1 Discretes (3)	30069	2	68	16-Bit Unsigned
Alarm2 Discretes (3)	30073	2	72	16-Bit Unsigned
Relay Discretes (3)	30077	2	76	16-Bit Unsigned
STEL Data (2)	30101	30	100	16-Bit Unsigned
STEL Discretes (3)	30161	2	160	16-Bit Unsigned
TWA Data (2)	30201	30	200	16-Bit Unsigned
TWA Discretes (3)	30261	2	260	16-Bit Unsigned

- (2) Data represents values displayed on the GG-6. If the range is less than 10 then the signal needs to be divided by 100. If the range is greater than or equal to 10 and less than 100 then the signal needs to be divided by 10.
- (3) 30 discretes are packed into two 16 bit words.



GG6-GE-B Register Map

Description	Object Name	Instance	Object Type	Data Type
Signal Data (1,2)	Sensor 1 -	0-29	Analog Input	16-Bit Unsigned
	Sensor 30			
Fault Discretes (3)	Faults	30	Multi-state Input	32-Bit Unsigned
Warn Discretes (3)	Warnings	31	Multi-state Input	32-Bit Unsigned
Alarm1 Discretes (3)	Alarm1s	32	Multi-state Input	32-Bit Unsigned
Alarm2 Discretes (3)	Alarm2s	33	Multi-state Input	32-Bit Unsigned
Relay Discretes (3)	Relays	34	Multi-state Input	32-Bit Unsigned
STEL Data (2)	STEL 1 -	40-69	Analog Input	16-Bit Unsigned
	STEL 30			
STEL Discretes (3)	STEL	70	Multi-state Input	32-Bit Unsigned
	Alarms			
TWA Data (2)	TWA 1 -	80-109	Analog Input	16-Bit Unsigned
	TWA 30			
TWA Discretes (3)	TWA	110	Multi-state Input	32-Bit Unsigned
	Alarms			
Sessions Count (4)	Sessions	120	Multi-state Input	32-Bit Unsigned
	Count			

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- (3) 30 discretes are packed into two 16 bit words.
- (4) Sessions Count is a counter that increments every time the GG-6 communicates with the Gateway Module. This can be used as a watchdog timer.



GG6-GR-M Register Map

Description	Start Register	Number of Registers	Entity Address	Data Type
Signal Data (1,2)	30001	30	0	16-Bit Unsigned
Fault Discretes (3)	30061	2	60	16-Bit Unsigned
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Alarm1 Discretes (3)	30069	2	68	16-Bit Unsigned
Alarm2 Discretes (3)	30073	2	72	16-Bit Unsigned
Relay Discretes (3)	30077	2	76	16-Bit Unsigned
STEL Data (2)	30101	30	100	16-Bit Unsigned
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	Sensor 30			
Fault Discretes (3)	Faults	30	Multi-state Input	32-Bit Unsigned
Warn Discretes (3)	Warnings	31	Multi-state Input	32-Bit Unsigned
Alarm1 Discretes (3)	Alarm1s	32	Multi-state Input	32-Bit Unsigned
Alarm2 Discretes (3)	Alarm2s	33	Multi-state Input	32-Bit Unsigned
Relay Discretes (3)	Relays	34	Multi-state Input	32-Bit Unsigned
STEL Data (2)	STEL 1 -	40-69	Analog Input	16-Bit Unsigned
	STEL 30			
STEL Discretes (3)	STEL	70	Multi-state Input	32-Bit Unsigned
	Alarms			
TWA Data (2)	TWA 1 -	80-109	Analog Input	16-Bit Unsigned
	TWA 30			
TWA Discretes (3)	TWA	110	Multi-state Input	32-Bit Unsigned
	Alarms			
Sessions Count (4)	Sessions	120	Multi-state Input	32-Bit Unsigned
	Count			

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