

Graphic Panel

GP-XBC (RS485)

Solution Guide



Preface

Thank you very much for selecting Autonics products.

Please familiarize yourself with the information in this manual and in the product manuals before using them.





This solution guide contains information about a specific architecture solution and does not replace any specific product documentation.

This document does not attempt to describe the entire solution architecture and configuration but only introduce some basics procedures. Customization of this solution can be made by the users in respect of safety laws and regulations.

Document Guide

- This manual provides procedure steps for a particular solution architecture. It does not offer any guarantee concerning matters beyond the scope of this manual.
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- This manual is not provided as part of the product package. Please visit our home-page (www.autonics.com) to download a copy.
- The content of this manual may vary depending on updates of the product software and others unforeseen developments within Autonics. It is subject to change without prior notice. Upgrade notices are published through our homepage.
- We contrived to describe this manual the easiest and more accurate way. However, if there are any corrections required or questions, please notify us these remarks on our homepage.

Document Symbols

Symbol	Description
 Note	Additional information about a particular feature.
 Warning	Failure to follow instructions can result in serious injury or death.
 Caution	Failure to follow instructions can lead to a minor injury or product damage.
 Ex.	An example of the concerned feature's use.
※1	Annotation mark.

Document Version History

Date	Version	Author	Description
December 17 th 2016	v1.0	기술지원팀 - YCG	Document creation
August 8 th 2017	v2.0	기술지원팀 - GTE	Document revision and template update Add several sections
September 18 th 2017	v2.0.1	기술지원팀 - GTE	Minor text updates

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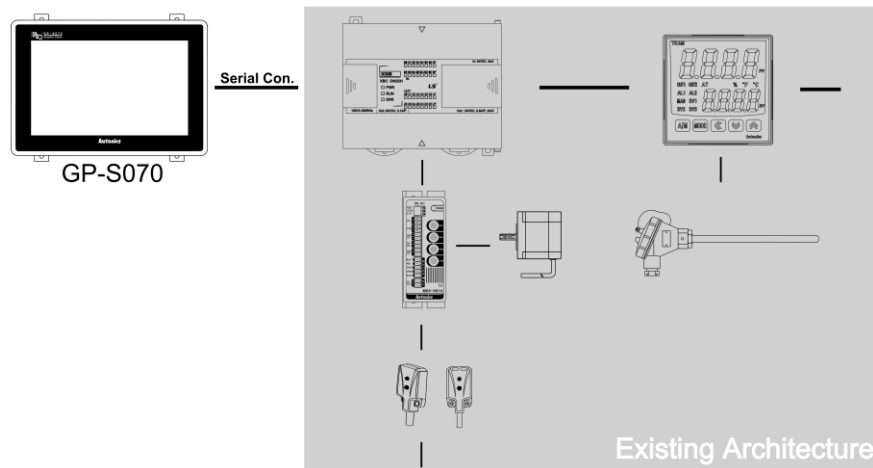
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1 Solution Overview

1.1 Solution description

Autonics GP-S070-T9D6 device from the GP/LP series is a 7.0 inch LCD color touch panel with build-in serial connection through RS-422 and RS-232C ports. It is a standalone screen with custom OS and dedicated graphic editor software to create up to 500 graphic pages.

Thanks to its characteristic, it can be added on top of any existing automation architecture with different type of serial connection and can monitor different devices parameters or statuses and key Setting Values or Present Values, facilitating the access to data that was not in the previous architecture.



This solution brings the following benefits to your current installation:

- Allows to monitor in real time PLC & devices status and feedback values
- Allows a convenient control of the different parameters and setting values
- Allows a fast and clear notification of the different alarms

This solution is optimized because:

- Can be simply added on top of your current installation
- Very small dimension so can be installed close to the controlling device for or local control
- Internal graphics and control functions for standalone application without need of server or OS licensing.

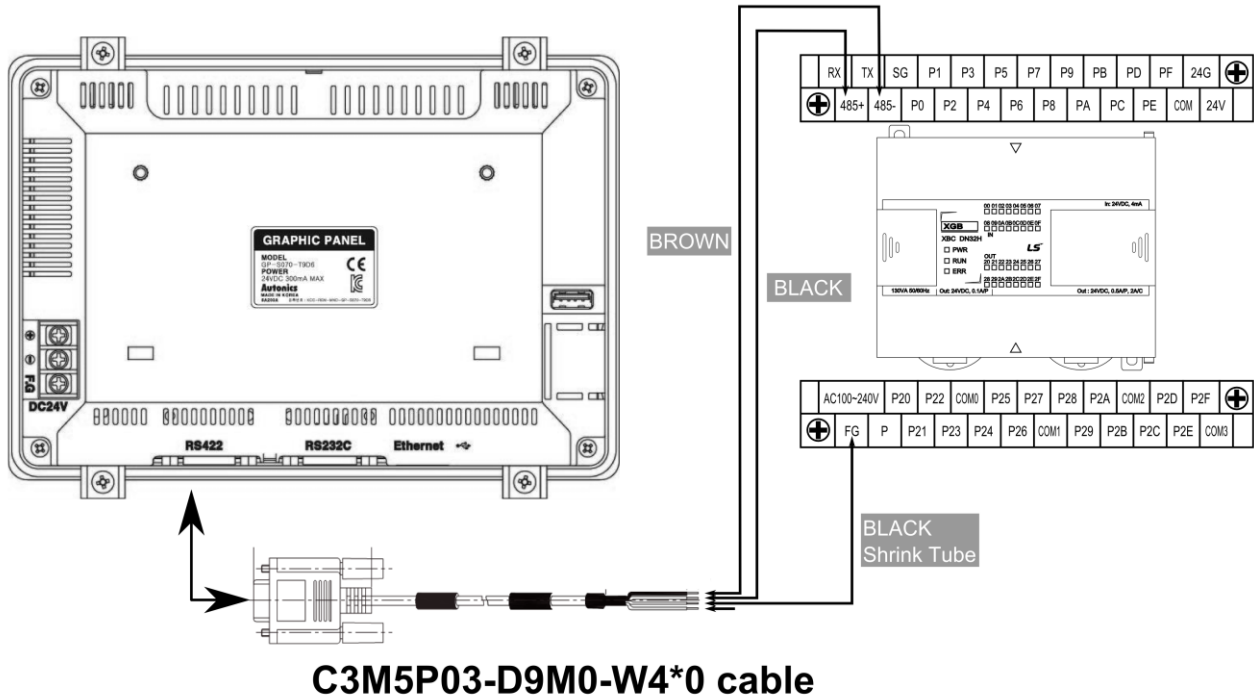
1.2 Solution components and version

Hardware / Software	Version	Note
Ms Windows	Win 7	
GP-Editor	v4.01 (build 023)	Autonics product. Release 2016.10.13
GP-S070 T9D6	Firmware v1.20	Autonics product. Release 2016.01.26
XG-5000	v4.20	LS product. Release 2017.03.24
XBC-DN32H(Cnet)		LS product
Serial Cable		Autonics ref. C3M5P03-D9M0-W4*0

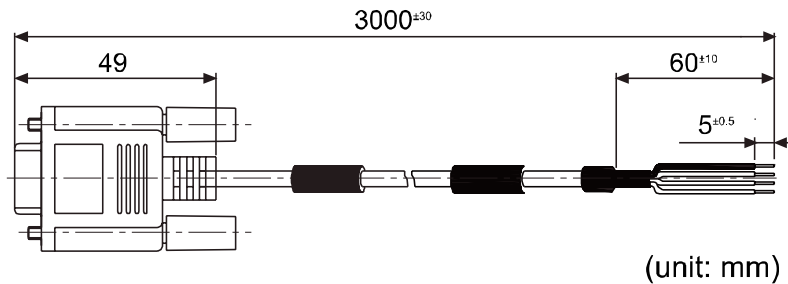
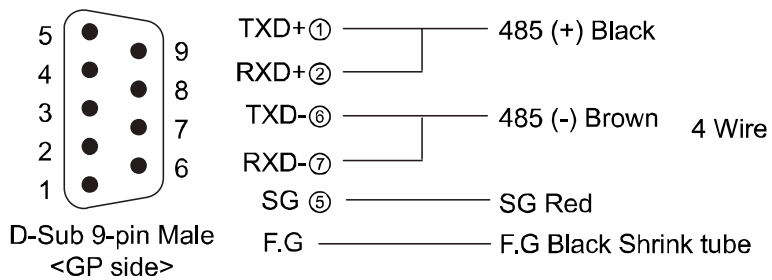
1.3 Solution architecture

GP-S070-T9D6

XBC-DN32H(Cnet)



1.4 Communication cable pin details and dimensions (Autonics model: C3M5P03-D9M0-W4*0)



2 GP-S070 Communication Settings

The GP device should be set to use its RS422 port and to control data registers of a XBC type device.

So we need:

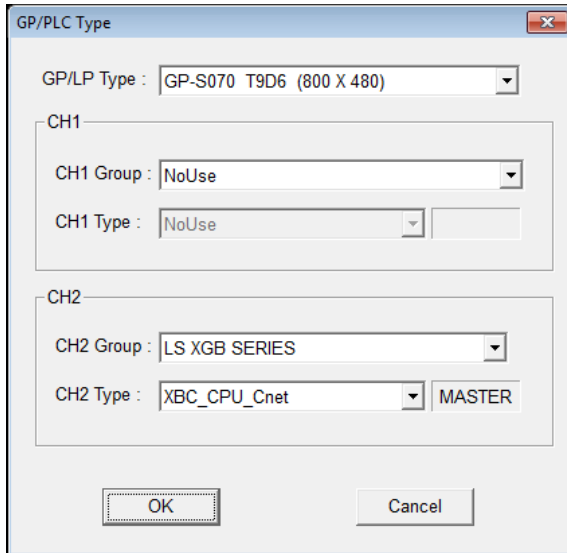
- to create a GP-Editor project with XBC connection and different graphical components to interact with the registers of the XBC
- to set communication parameters of the GP device to allow a connection with the PC and GP-Editor
- to send the GP-Editor project to the GP device
- to check the serial communication settings of the GP connection with the XBC PLC.

Remarks:

In this document, we will use an Ethernet connection to download the GP-Editor project to the GP device, please refer to the 'GP-Editor Download Manual' if you want to use another method (serial connection or USB connection).

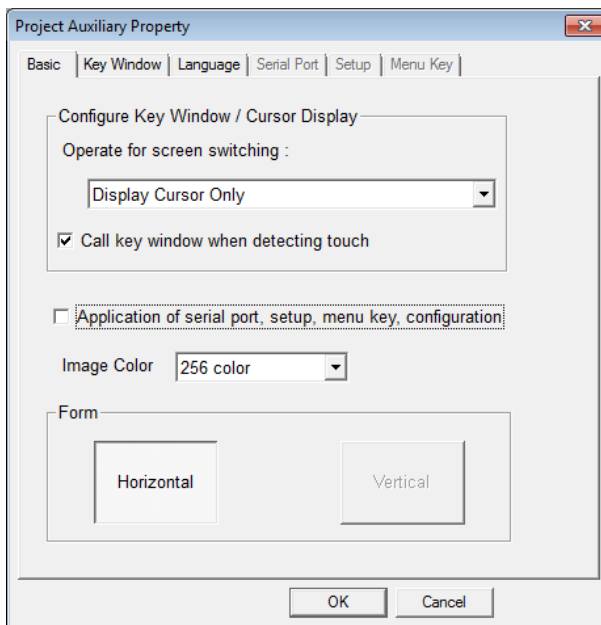
2.1 GP-Editor project settings

- 1st Run the GP Editor software and select [Project] – [New] in the menu bar. If you already build a project file, open this project by selecting [Project] – [Load] in the menu bar.
- 2nd In the 'GP/PLC Type' dialog box, set 'GP/LP Type', CH1/2 'Group' and 'Type' as bellow then click 'OK'.



Item	Settings
GP / LP Type	GP-S070 T9D6
CH1 Group / Type	No Use
CH2 Group / Type	LS XGB SERIES / XBC CPU Cnet

- 3rd In the 'Project Auxiliary Property' dialog box click 'OK'. The graphic editor page will be displayed.



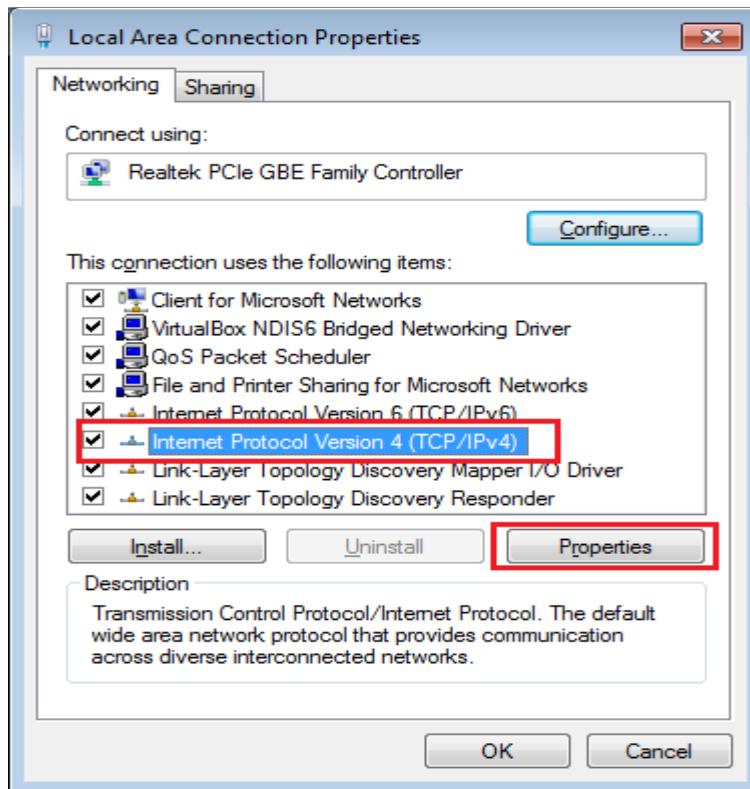
- 4th **The project has been properly initially set. Then you need to create your own graphics and set links between GUI components and the XBC PLC registers.**

Rem: Please refer to the 'GP-Editor User Manual' document for procedures on graphics creation or to the example section of this document for a simple interface example.

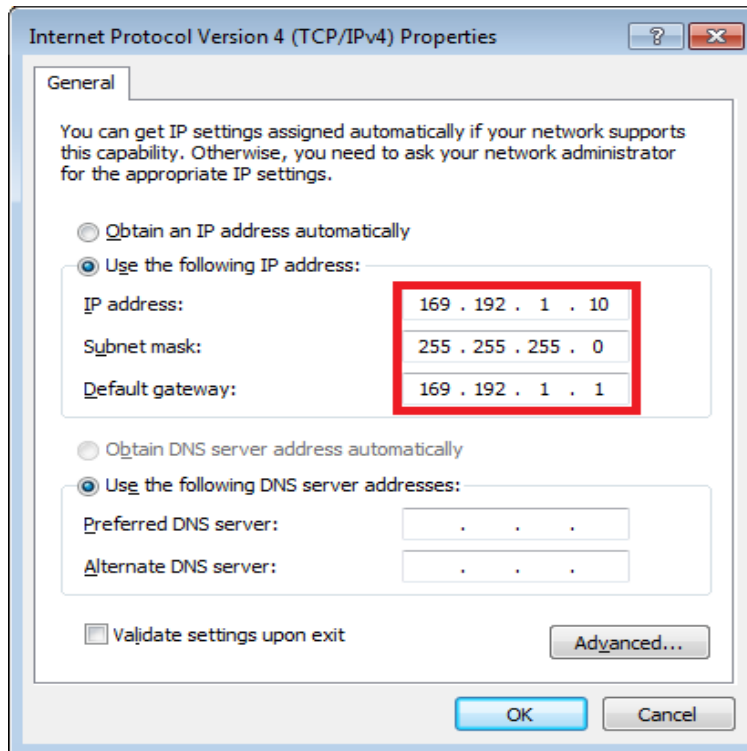
2.2 GP-S070 Ethernet communication settings for GP-Editor

1st First check the computer IP settings:

On the PC, go to [Control Panel] – [Network and Sharing Center] – [Local Area Connection] – [Properties], click on 'Internet Protocol Version 4 (TCP/IPv4) and 'Properties'.



2nd Note your IP address and default gateway to later set properly the GP address.

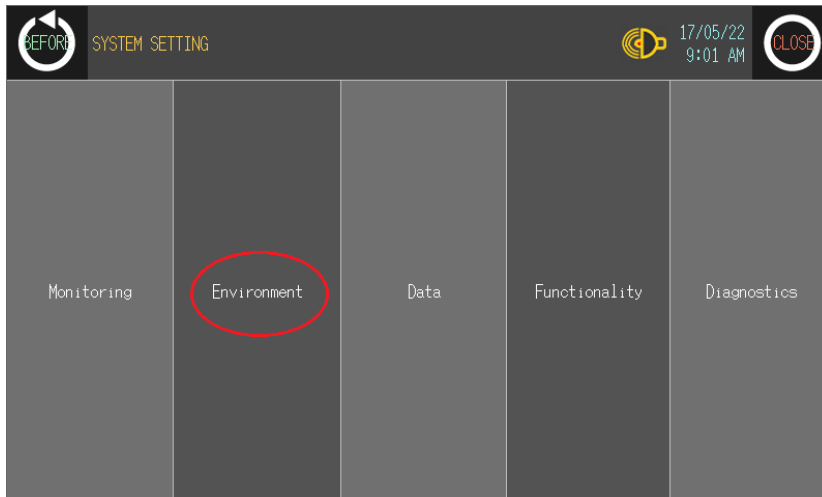


3rd On the GP-S070 device, click on the top-left of the screen to open the 'System Setting' menu.

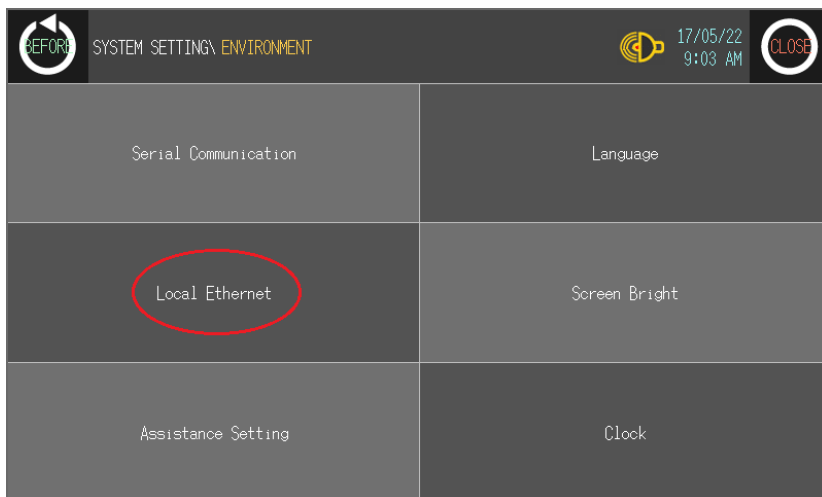


Rem: if the 'System Setting' menu does not appear, the default menu shortcut has been changed. Try to click on the other corner of the touch panel or refer to the 'GP-S070 - User Manual'.

4th Select 'Environment'.

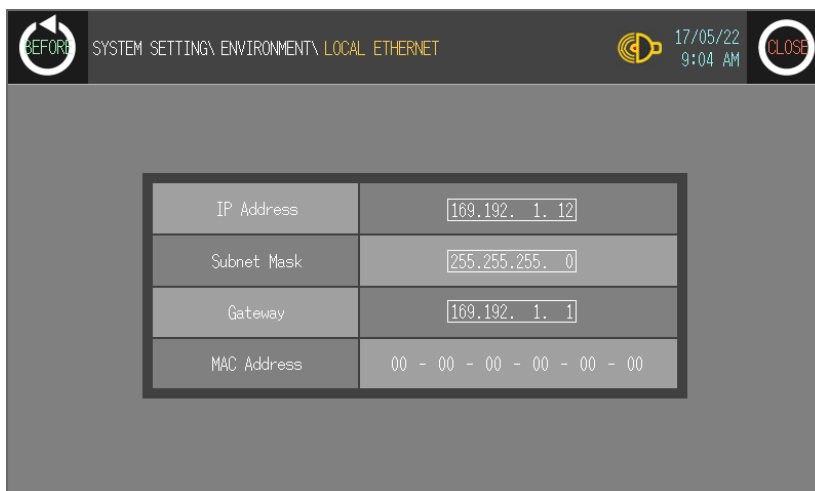


5th Select 'Local Ethernet'.



6th Set the Ethernet settings as below:

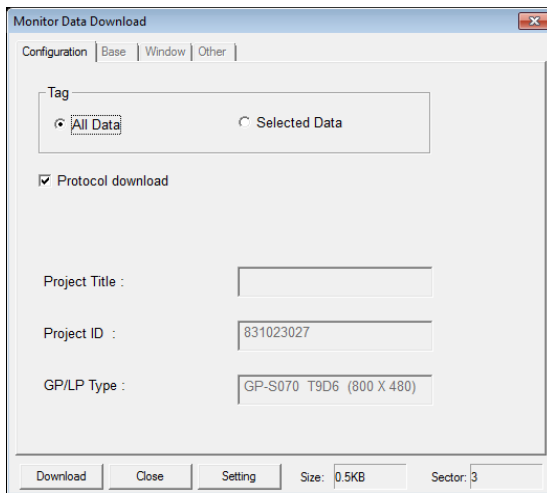
Items	Settings	Comment
IP Address	169.192.1.12	With last digit unique number on the network
Station	255.255.255.0	Same that the PC
Device	169.192.1.1	Same that the PC



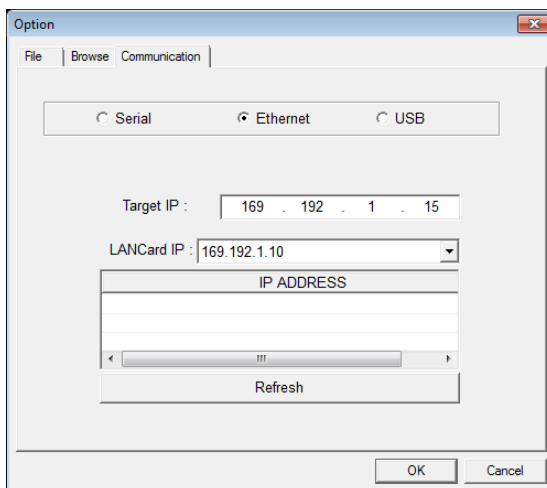
7th Click on 'CLOSE' to validate the changes.

2.3 Send GP-Editor project to GP-S070 device by Ethernet

1st In GP-Editor, select the [Communication] – [Download] menu, and click on 'Setting'.



2nd In the 'Option' window, select 'Ethernet' and write the GP IP address in the 'Target IP' or automatically look for your device by selecting the good 'LANCard IP', clicking on 'Refresh' and selecting the device that appears in the result table.



3rd Click on 'OK' to validate the connection method and to go back to the download page. Then click on 'Download' and 'Yes' to start loading the project in the GP device.

4th **The project has been loaded in the GP device.**

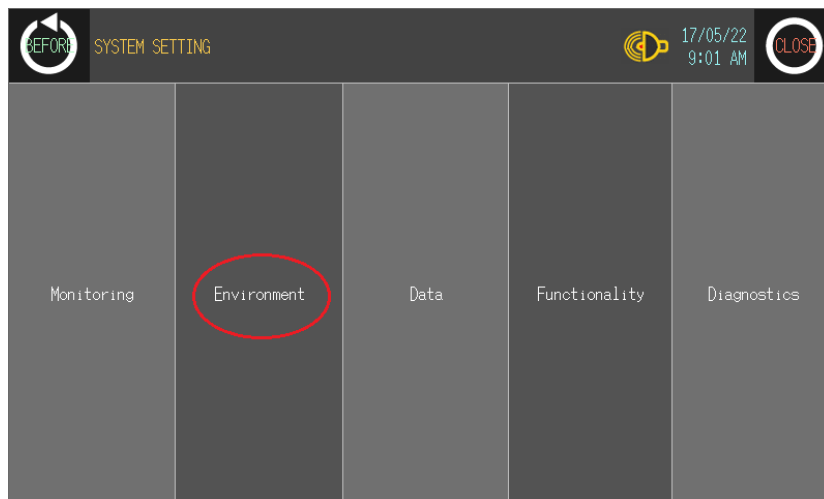
2.4 GP-S070 serial communication settings for XBC PLC

1st Click on the top-left of the GP-S070 to open the 'System Setting' menu.

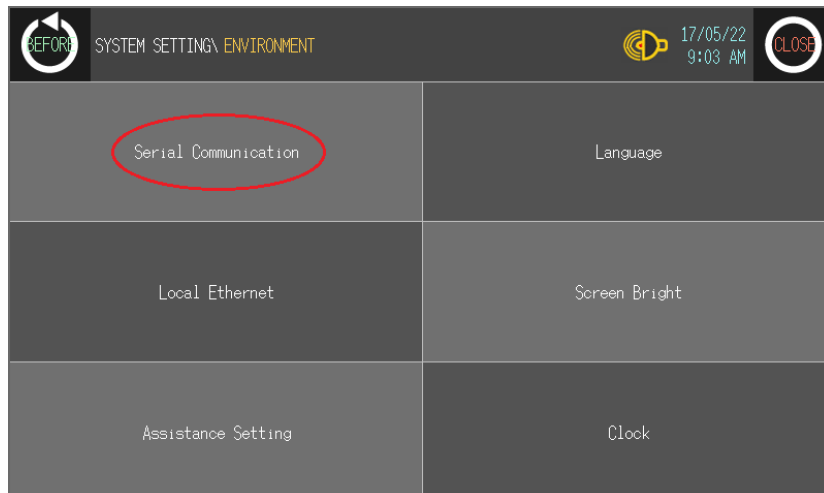


Rem: if the 'System Setting' menu does not appear, the default menu shortcut has been changed. Try to click on the other corner of the touch panel or refer to the 'GP-S070 - User Manual'.

2nd Select 'Environment'.



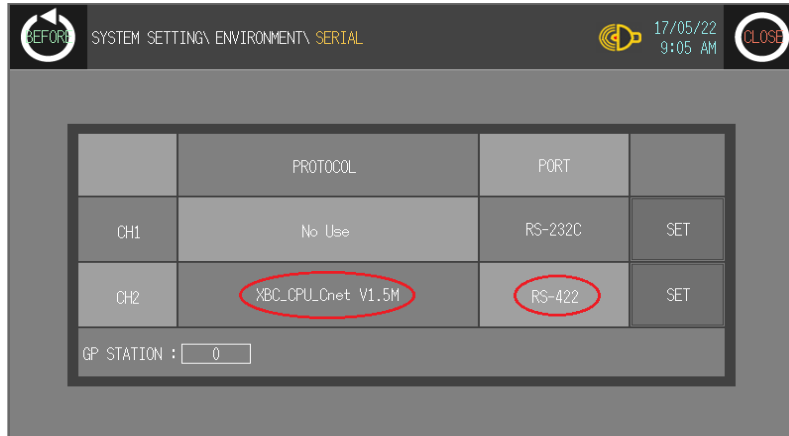
3rd Click on 'Serial Communication'.



4th In the 'Serial' page, set the port parameters as below by clicking on the different values.

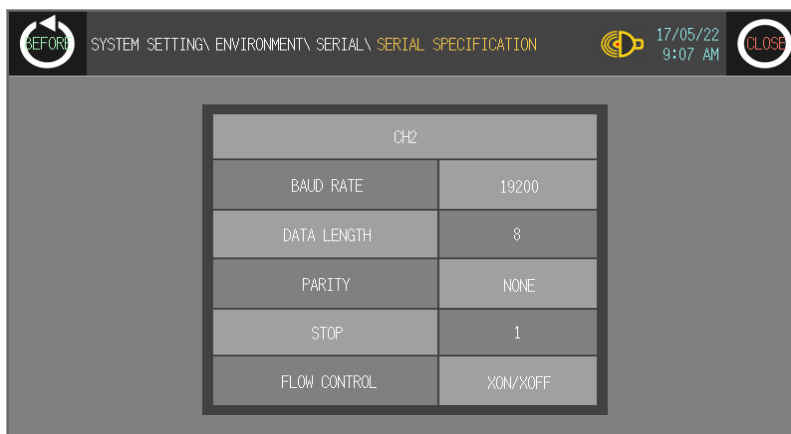
	PROTOCOL	PORT	
CH1	No Use	RS-232C	SET
CH2	XBC_CPU_Cnet V 1.5M	RS-422	SET

And GP Station address: 0



5th Change the communication settings by clicking the 'SET' button and setting parameters as below. Then click on 'CLOSE'.

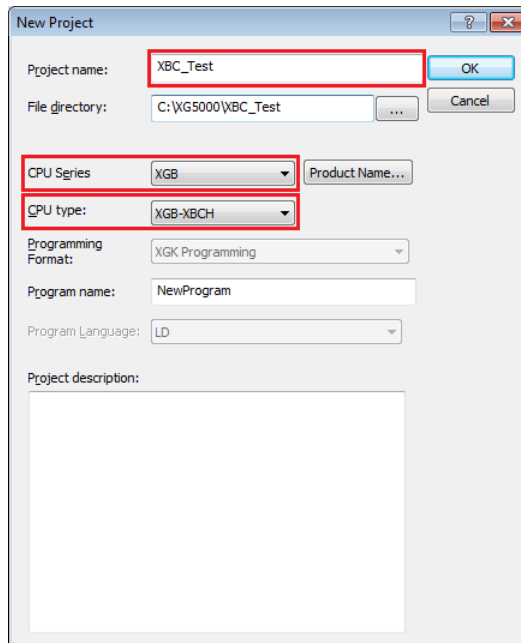
Item	Setting	Note
Baud rate	Multiple choice	User setting
Data length	8-bit	User setting
Parity bit	None	User setting
Stop bit	1-bit	User setting
Flow control	XON/XOFF	Any value



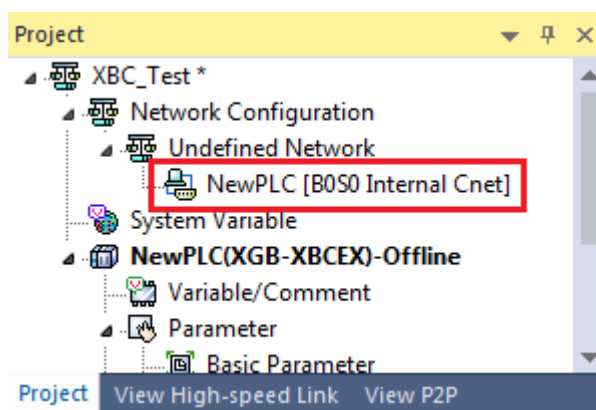
6th The GP-S070 is ready to be connected to the XBC PLC by its RS422 communication port.

3 XBC project settings

- 1st Run XG5000 and select [Project] – [New Project] in the menu bar. Enter project name and select CPU type 'XGB'-'XGB-XBCH' in the 'New Project' dialog box. Click 'OK'.

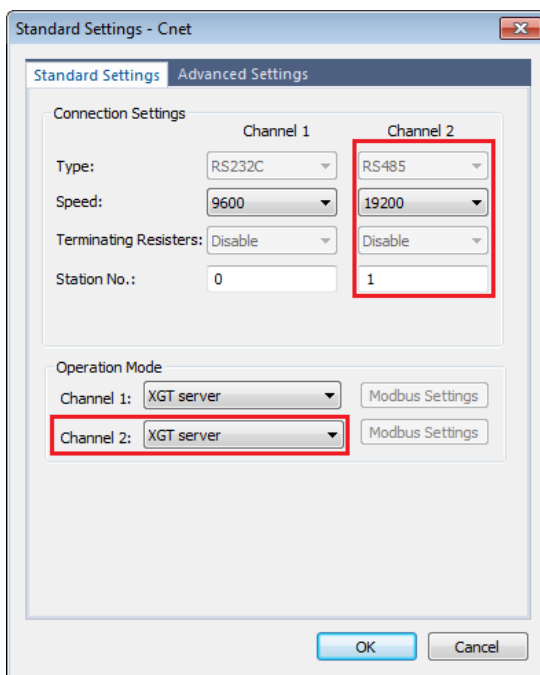


- 2nd In the project tree, under [Network Configuration] – [Undefined Network], double-click on the 'NewPLC [B0S0 Internal Cnet]' device.



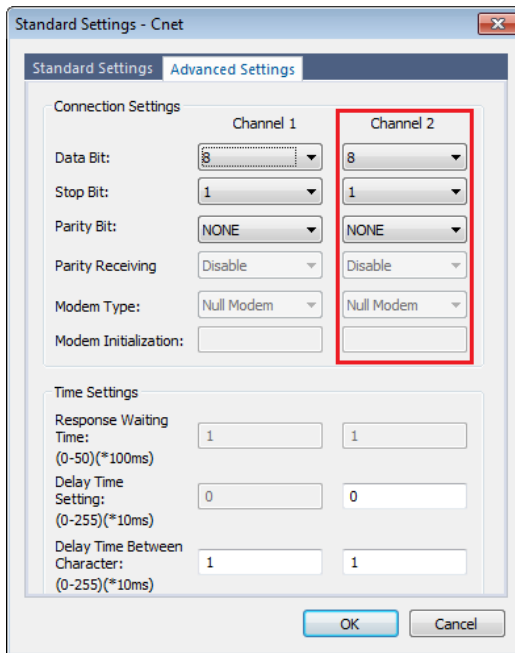
3rd In 'Standard Settings - Cnet' dialog box appears. Set 'Standard Settings' tab as below.

Item		Setting	Note
Standard settings Channel 2	Communication type	RS-485	Fixed
	Communication speed	Same that GP setting	User setting
	Terminating resistances	Disable	Fixed
	Station No.	Multiple choice	User setting, should be unique on the network
Operation mode	Channel 2	XGT server	Mandatory



4th In 'Advanced Settings' tab set as below, then click 'OK'.

Item		Channel 2
Advanced settings	Data bit	8
	Stop bit	1
	Parity bit	NONE



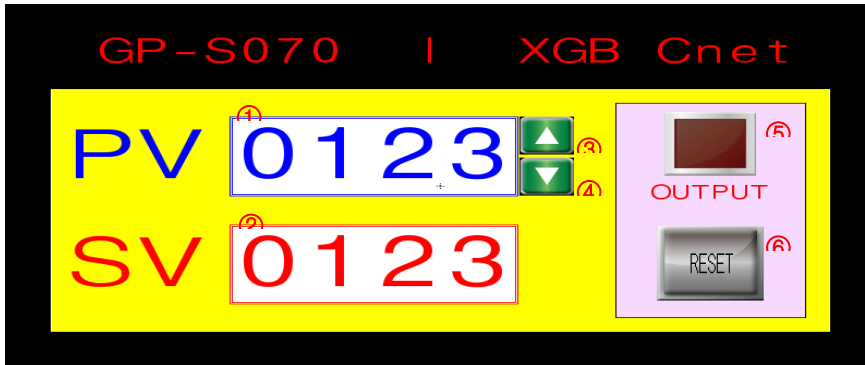
5th **The project has been properly set. Then you need to create your own PLC program and download the complete project to the XBC device by selecting [Online] – [Write], then clicking 'OK'.**

Rem: Please refer to the XG5000 documentation for procedures on Ladder program creation and other method to write project to a XBC device.

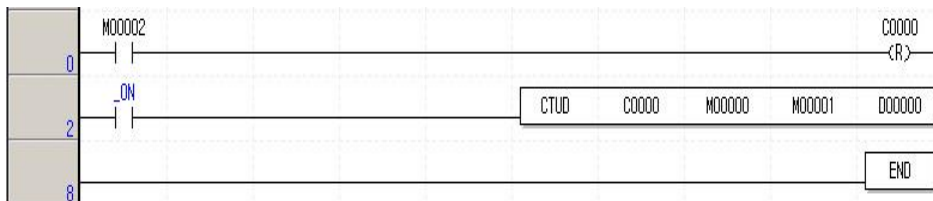
4 GUI Example

4.1 Solution overview

4.1.1 GP-S070 drawing (in GP-Editor from Autonics)



4.1.2 PLC program (in XG 5000 from LS)



Rem: We will not describe how to create a Ladder program under XG 5000 in this document. Please refer to the XG 5000 documentation for more information.

4.2 GP-S070 – XBC connection

GP-S070			XBC	
Item	Tag Property	Usage	Bit	Word
①	Numeral display	Counter present value	—	C0
②	Numeral input	Counter set value	—	D0
③	Touch key (momentary)	Input (Up)	M0	—
④	Touch key (momentary)	Input (Down)	M1	—
⑤	Lamp	Counter output	C0	—
⑥	Touch key (momentary)	Reset	M2	—

In this example, we will set the communication address:

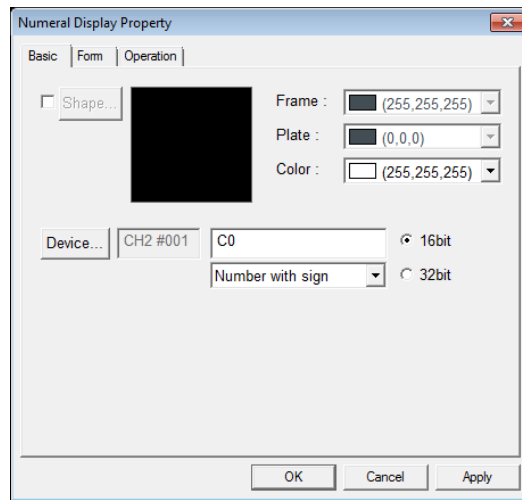
- of the XBC device to 1
- of the GP-S070 device to 0

4.3 GP Editor graphic

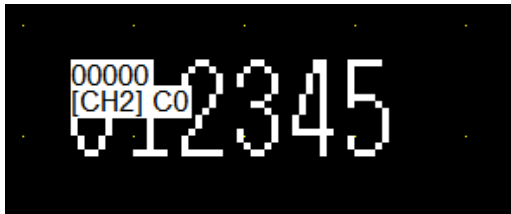
4.3.1 Numeral display

- 1st Select [Draw] – [Numeral Display] in the menu bar. Click 'Device' then set the device parameters as below.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	C0



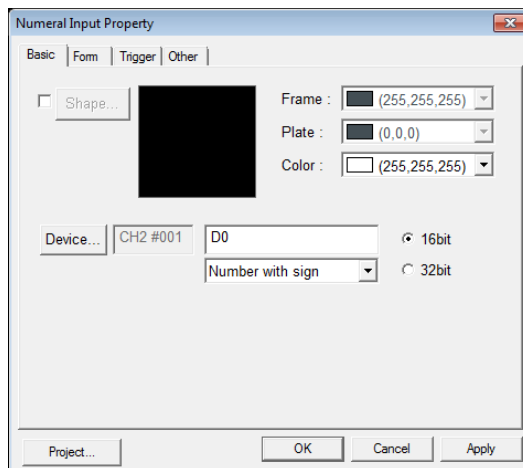
- 2nd Click 'OK' then move/resize the component as desired.



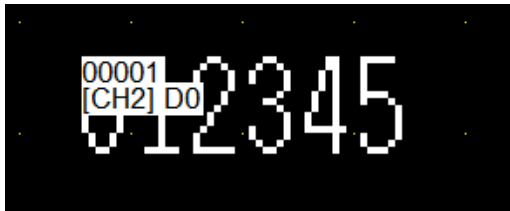
4.3.2 Numeral input

- 1st Select [Draw] – [Numeral Input] in the menu bar. Click 'Device' then set the device parameters as below.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	D0



- 2nd Click 'OK' then move/resize the component as desired.



4.3.3 Touch key (Up key)

- 1st Select [Draw] – [Touch Key] – [Action] – [Bit] in the menu bar. Click 'Device' and set the device parameters as below. Then click 'OK'.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	M0
Action	Momentary



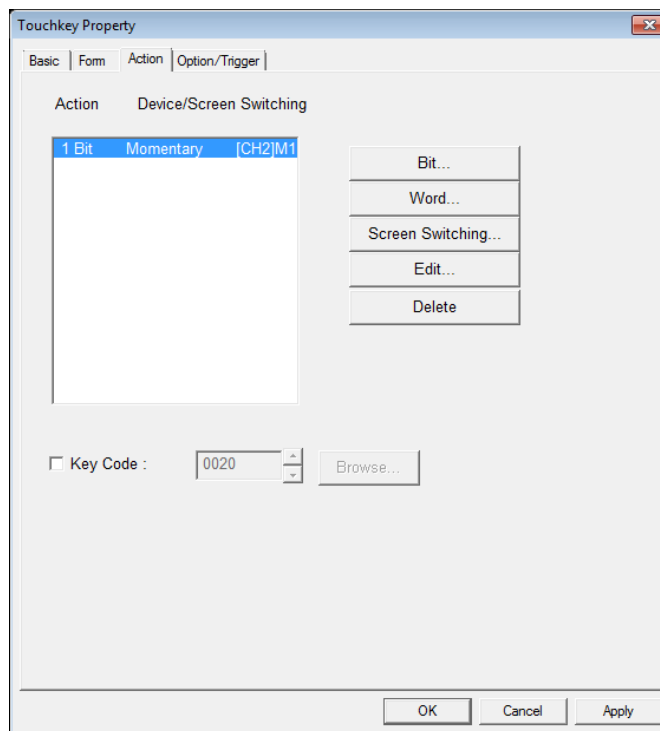
- 2nd Click on the 'Form' tab, then on 'Shape...'. The graphic of the button can be selected in the image library, select for example the image '7 SW-013' then click 'OK'.
- 3rd Click 'OK', then move/resize the component as desired.



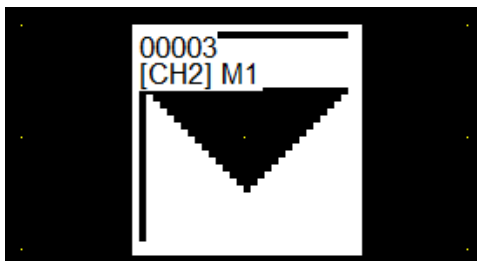
4.3.4 Touch key (Down key)

- 1st Select [Draw] – [Touch Key] – [Action] – [Bit] in the menu bar. Click 'Device' then set the device parameters as below.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	M1
Action	Momentary



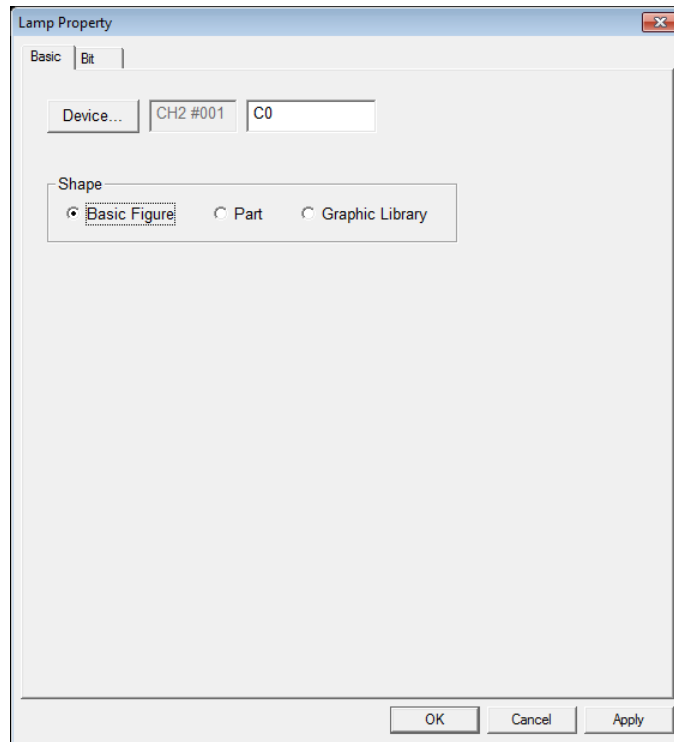
- 2nd Click on the 'Form' tab, then on 'Shape...'. Select for example the image '8 SW-015' then click 'OK'.
- 3rd Click 'OK', then move/resize the component as desired.



4.3.5 Lamp

1st Select [Draw] – [Lamp] in the menu bar. Click 'Device' then set the device parameters as below.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	C0



2nd Click on the 'Bit' tab, then on 'Shape...'. The graphic of the lamp can be selected in the image library, select for example the image '7 LP-013' then click 'OK'.

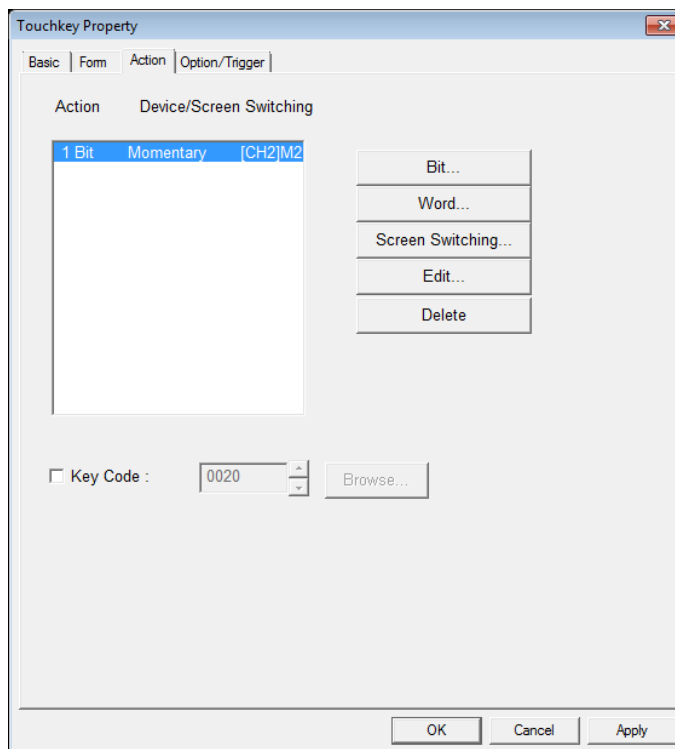
3rd Click 'OK', then move/resize the component as desired.



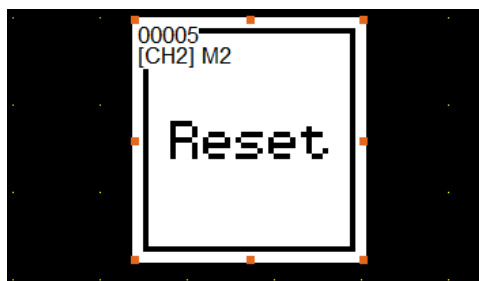
4.3.6 Touch key (Reset key)

- 1st Select [Draw] – [Touch Key] – [Action] – [Bit] in the menu bar. Click 'Device' then set the device parameters as below.

Items	Settings
Channel	[CH2]XBC_CPU_Cnet
Station	XBC communication address
Device	M2
Action	Momentary



- 2nd Click on the 'Form' tab, then on 'Shape...'. Select for example the image '2 SW-003' then click 'OK'. A Text can also be added by clicking on 'Text...'.
 3rd Click 'OK', then move/resize the component as desired.



4.3.7 Graphic result



5 Appendix

5.1 Serial communication settings

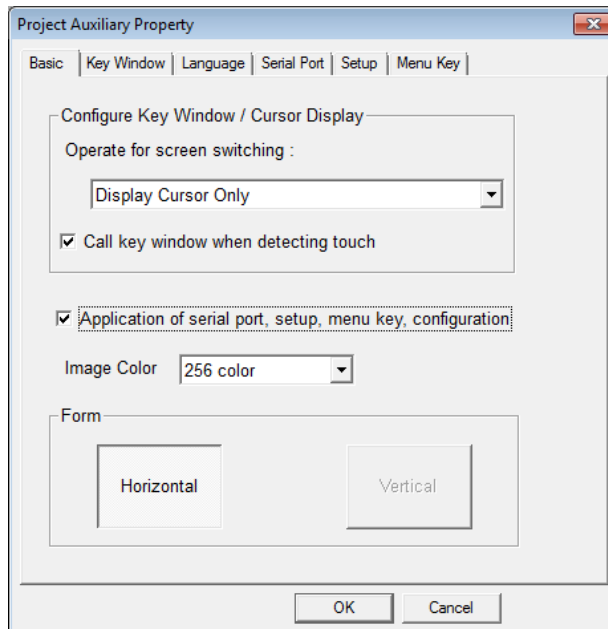
The serial communication parameters can be set in GP-Editor or directly on the GP device.

The following table shows which port can be set by using the 2 different methods.

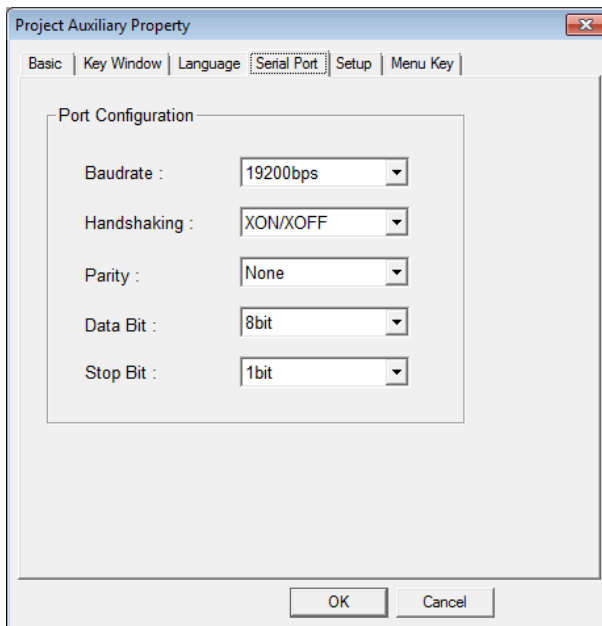
Item	Setting in GP Editor	Setting in GP-S070 device
CH1 comm. setting	Available	Available
CH2 comm. setting	Unavailable	Available

5.1.1 Change CH1 communication settings in GP-Editor

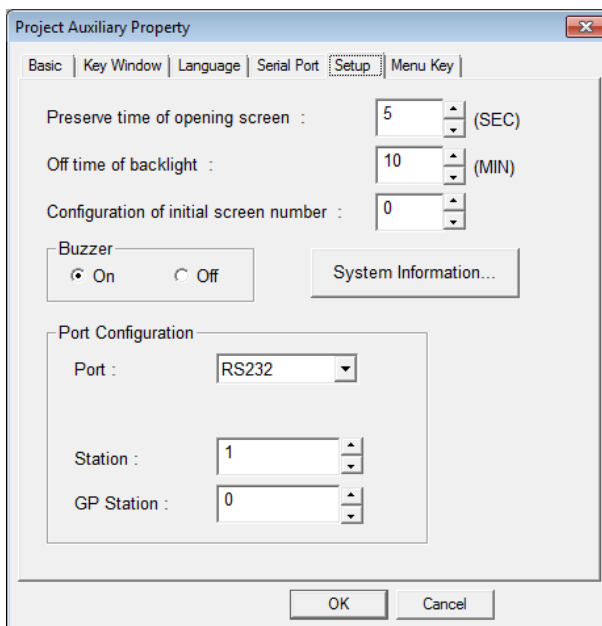
- 1st Select [Common] - [Auxiliary Configuration] - [Project] in the menu bar. Check the 'Application of serial port, setup, menu key, configuration' if it is not already done.



2nd In the [Serial Port] tab, set CH1 port configuration.



3rd In the [Setup] tab, select CH1 port type and set station numbers. The other available port will be allocated to the CH2 port.



5.1.2 Change CH1/CH2 communication settings in the GP device

Please refer to the '2.4 GP-S070 communication settings' procedure.

6 Troubleshooting

6.1 GP-S070: language settings

1st Click on the top-left of the GP-S070 to open the '시스템설정' menu.

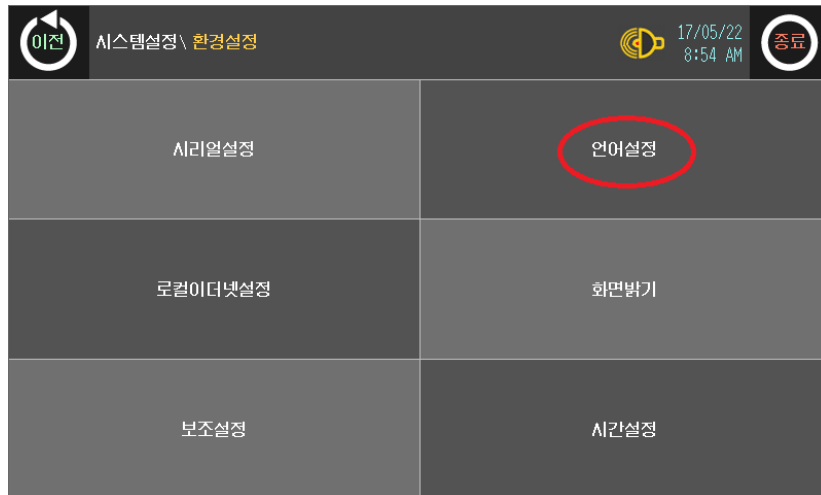


Rem: if the 'System Setting' menu does not appear, the default menu shortcut has been changed. Try to click on the other corners of the touch panel or refer to the 'GP-S070 - User Manual'.

2nd Select '환경설정'.



3rd Click on '언어설정'.



4th Click on 'ENGLISH' then validate the change by click '이전'.



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Tel: 52-55-5207-0019 / Fax: 52-55-1663-0712 / E-mail: ventas@autonics.com

Russia – Autonics Corp. Russia Representative Office

Tel/Fax: 7-495-660-10-88 / E-mail: russia@autonics.com

Turkey – Autonics Otomasyon Ticaret Ltd. Sti.

Tel: 90-216-365-9117/3/4 / Fax: 90-216-365-9112 / E-mail: infotr@autonics.com

USA – Autonics USA, Inc.

Tel: 1-847-680-8160 / Fax: 1-847-680-8155 / E-mail: sales@autonicsusa.net

Vietnam – Cong Ty TNHH Autonics Vina

Tel: 84-8-3771-2662 / Fax: 84-8-3771-2663 / E-mail: vietnam@autonics.com

Dimensions or specifications on this manual are subject to change and some models may be discontinued without notice.