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Human Machine Interface

XGT Panel

XGT Panel Series

User's Manual

XP30-BTE
XP30-BTA
XP30-TTE
XP30-TTA
XP40-TTE
XP40-TTA
XP50-TTE
XP50-TTA
XP70-TTA
XP80-TTA
XP90-TTA

Safety Instructions

- Read this manual carefully before installing, wiring, operating, servicing or inspecting this equipment.
- Keep this manual within easy reach for quick reference.

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Before using the product…

To use the product safely and effectively, please read this instruction manual thoroughly before use.

- Please keep to the safety precaution, for it is to prevent accidents and potential danger from occurring.

- Safety precaution is classified into 'Warning' and 'Caution' and their meanings are as follows.

⚠ **Warning** Violating the instruction may result in serious personal injury or death.

⚠ **Caution** Violating the instruction may result in slight personal injury or product damage.

- The indicated illustrations on the product and in the manual have the following meanings.

⚠ Be cautious, for danger may be present.

⚠ Be cautious, for there is a possibility of an electric shock.

- After reading the instruction manual, keep it handy for quick reference.

Design Precautions

⚠ Warning

- **Install a safety circuit external to the HMI to protect the whole control system in case of external power supply trouble.**

  Serious trouble may occur to the entire system due to erroneous output/operation of the HMI.

Design Precautions

⚠ Caution

- **In/output signal or communication cable should be at least 100mm apart from High-voltage/power wires.**

  Otherwise, it may cause erroneous output/operation.

Installation Precautions

⚠ Caution

- **Use the HMI in an environment that meets the general specification contained in this manual or datasheet.**

  Otherwise, it could result in electric shock, fire, erroneous operation or deterioration.

- **In case of much vibration in the installed environment, be sure to insulate the HMI from direct vibration.**

  Otherwise, it could result in electric shock, fire or erroneous operation.

- **Be sure not to let foreign substances such as conductive debris inside the product.**

  Otherwise, it could result in electric shock, fire or erroneous operation.

Wiring Precautions

⚠ Warning

- **Be sure to turn off the HMI and external power before wiring.**

  Otherwise, it may result in an electric shock or damage to the product.

⚠ Caution

- **Wire correctly by checking each of the product's rated voltage and terminal layout.**

  Otherwise, it may result in fire, electric shock or erroneous operation.

- **Tighten terminal screws with specified torque when wiring.**

  If terminal screws are loose, it may result in short circuits, fire or erroneous operation.

- **Use the exclusive HMI 3-type grounding for the FG terminal.**

  If not grounded, it may result in erroneous operation.

- **Be sure not to let any foreign substances such as wiring debris inside the module.**

  Such debris may cause fire, damage or erroneous operation.

Startup and Maintenance Precautions

⚠ Warning

- **Do not touch the terminals while power is on.**

  Otherwise, it may cause electric shock or erroneous operation.

- **Turn off the PLC and external power when cleaning or tightening the terminal.**

  Otherwise, it may cause electric shock or erroneous operation.

- **Do not charge, disassemble, heat, short circuit, solder, etc. the battery.**

  Mishandling the battery may cause overheating, crack, fire and may result in injury or fire.

⚠ Caution

- **Do not disassemble PCB from the product case or modify the product.**

  Otherwise, it may result in fire, electric shock or erroneous operation.

- **Use cellular phone or walky-talky at least 30cm away from the PLC.**

  Otherwise, it may result in erroneous operation.

Disposal Precaution

⚠ Caution

- **When disposing of this product or battery, treat it as industrial waste.**

  Otherwise, it may cause poisonous pollution or explosion.

Revision History

Version	Date	Contents	Revised location
V1.0	‘07.4	First Edition	-
V2.0	’09.10	1. Initial screen changed (horizontal bar -> square box type)	CH4, CH5, CH6, CH8
		2. Menu name of initial screen changed (Download From USB -> Storage Download)	CH7.1
		3. Selecting one project file among many project files is available	CH7
		4. Sending project file by CF card is available	CH7
		5. File backup function by external storage equipment added	CH9
		6. Format of backup file is changed into CSV format	CH9
		7. New module XP80-TTA/AC added	CH3, CH12, APP2
		8. Project upload function by external storage equipment added	CH7
		9. Update function by external storage equipment added	CH7
		10. XP30-BTE interface added	CH1
		11. Figure and name of each part for XP30-BTE added	CH2
		12. Specification of XP30-BTE added	CH3
		13. Aux diagnosis function added	CH5
		14. Dimension of XP30-BTE added	APP2
		15. Specification of XP90-TTA/AC, XP70/80-TTA/DC added	CH3, CH10
		16. Dimension of XP90-TTA/AC, XP70/80-TTA/DC added	APP2
		17. PLC communication setting option in device menu added	CH6.7
		18. Multi-Touch function in environment setting added	CH4.1
V2.1	’10.06	1. XP30-TTE/DC added	CH2.1, CH3.2, CH10
		2. Clear Data function in Environment Setting added	CH4.7
V2.2	’11. 06	1. XP50-TTE/DC added	CH2.1, CH3.2, CH10
V2.3	’12. 06	1. XP40-TTE(TTA)/DC added	CH2,CH3.2,CH5,CH10
		2. Important User Information added (about protection sheet and using ferrite core)	CH10.1, CH10.2
		3. CE Standard Certification updated	CH12.1

※ The number of User’s manual is indicated the right side of the back cover.

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Chapter 1. General Introduction

1.1 Usage of User Manual

This manual provides information of each product's specification, usage and so on. This is necessary to use XGT Panel for medium and large HMI system.

The user manual's configuration is as follows.

Sequence	Category	Contents
Chapter 1	General Introduction	It describes this manual's configuration, product's feature and term.
Chapter 2	System Configuration	It describes feature and system configuration of each XGT Panel.
Chapter 3	Standard Specification	It describes XGT Panel's general and function specification.
Chapter 4	System Configuration	It describes XGT Panel's system configuration.
Chapter 5	Diagnostics	It describes XGT Panel's self-diagnosis.
Chapter 6	Viewing information of PLC Connection Status	It describes the way on connection status information of PLC which is connected with XGT Panel.
Chapter 7	Transmission of Project from USB Storage Device	It describes the way to execute the project by using USB storage device.
Chapter 8	XGT Panel S/W Update	It describes the way to update engine at XGT Panel.
Chapter 9	Backup files by using Storage Devices	It describes the way to backup recipe, logging and etc. files by using storage devices.
Chapter 10	Installation and Wiring	It describes an installation, wiring and caution for reliability of PLC system.
Chapter 11	Maintenance	It describes inspection category and method for long normal operation of PLC system.
Chapter 12	EMC Standard	It describes system configuration for EMC standard.
Appendix 1	Troubleshooting	It describes a variety of error contents and measure.
Appendix 2	Dimension	It describes the dimension of XGT Panel.
Appendix 3	Warranty and Environment Policy	-

Remark

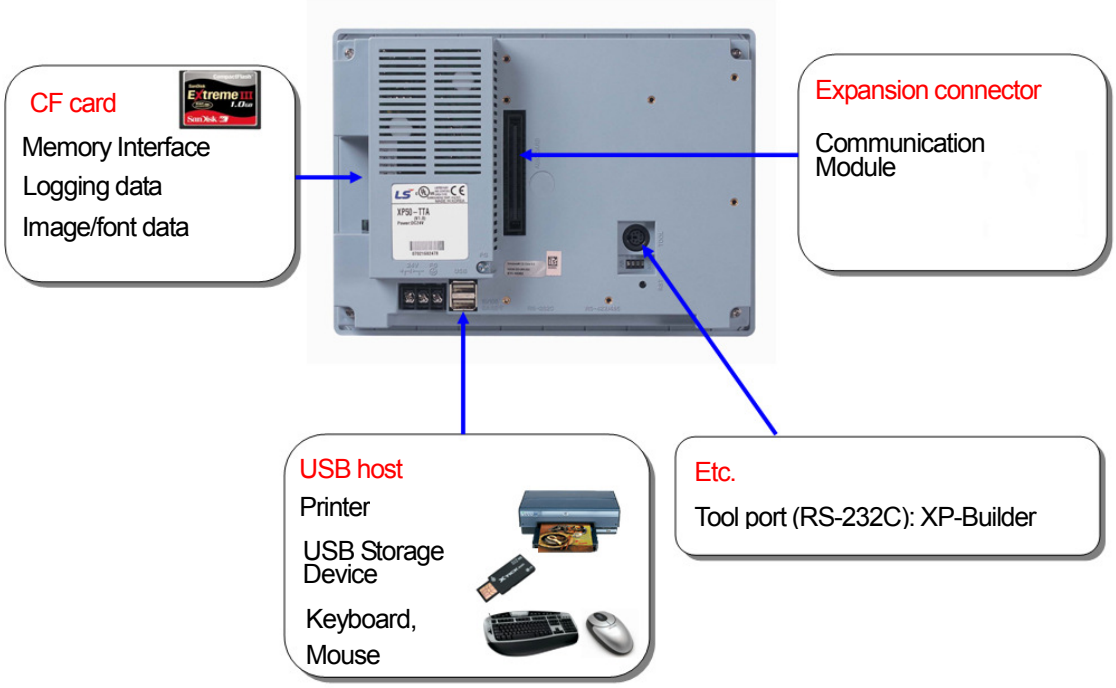
This manual doesn't describe connection with XP-Builder and PLC. For their own function, Please refer to the related manuals.

1.2 Feature

XGT Panel has the following features.

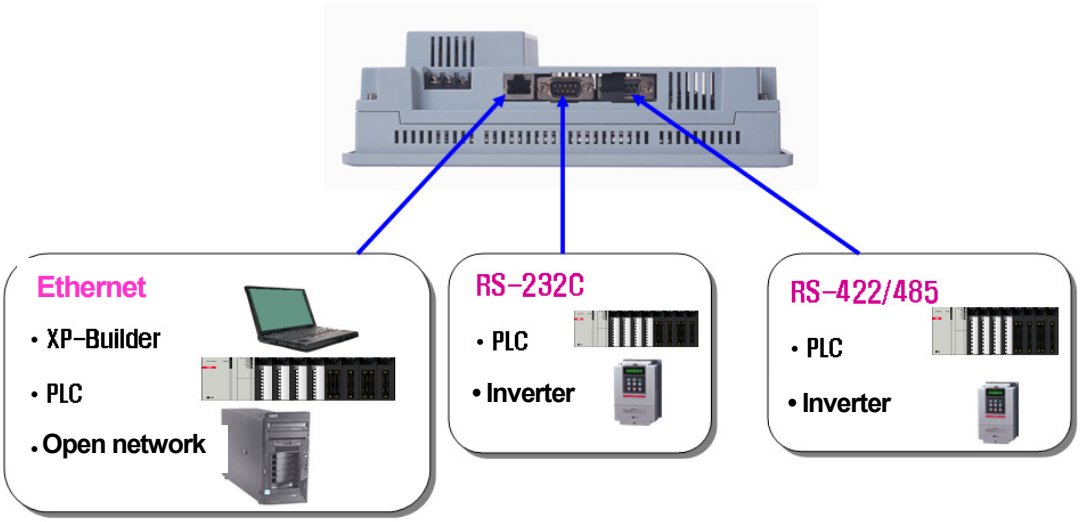
(1) Diverse external interface

(a) It maximizes custom's use by providing diverse external interface including USB, CF card and Ethernet.

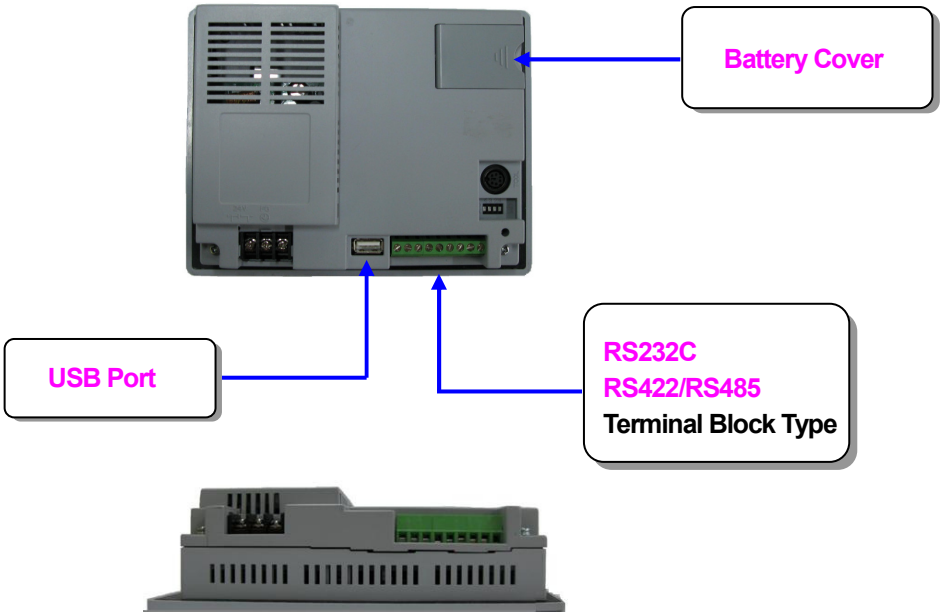


(b) It can be connected with control device such as PLC, INVERTER.

- It can be connected by RS-232C, RS-422/485, Ethernet (10/100 BASE-T).



(c) XP30-BTE(TTE), economic type, is not supported for Ethernet, expansion connector and CF card.



(2) Based on Windows CE

(a) Adoption of Microsoft Company's Windows CE
- Windows CE 5.0

(b) Advantage
- It provides stable software capacity by using Microsoft Company's platform.
- It can process diverse function simultaneously.
- It provides diverse interface including Ethernet, USB, and CF card.
- The user interface including mouse and keyboard can be connected.
- It has high flexibility like computer software.
- Fast reaction is available when adding new equipment.
- Wide data sharing and management with upper system is available. (Later)

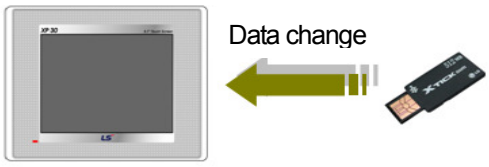
(3) Improvement of project transmission time

(a) It provides Ethernet which is faster than RS-232C.

(b) It provides the transmission function from USB storage device.

(4) High quality screen

(a) It provides the high quality scre



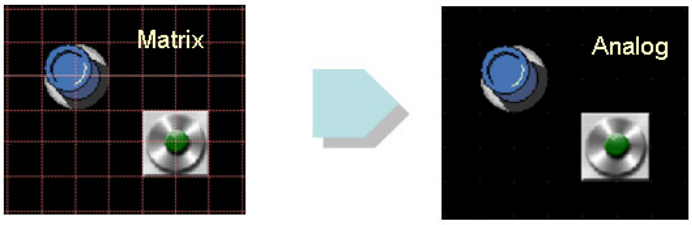
- It adopts TFT LCD which supports the 65,536 colors. (XP30-BTE/DC and XP30-BTA/DC adopts STN Mono LCD.)

(b) It provides diverse graphic type.
- It is available to express precisely and actually.
- It provides the simple moving function with GIF support.

(5) Analog touch Panel

(a) It adopts analog (resistor film method) Touch Panel.
- Visibility is improved without the grids.

(b) It provides high touch resolution.
- It can control Touch Panel precisely.



(6) Multilingual and diverse font

(a) It supports the multilingual function.
- It transmits the Windows/User font used in computer to XGT Panel.
- Additional language development is not necessary.
- Multilingual language is an advantage of Windows CE.

(b) It can express four kinds of language simultaneously.
- It can express 8 kinds of language simultaneously.
- Language switching is available by using special switch during operation.

(c) It can provide the various fonts.
- Various expressions are available by using the Windows/User font.
- Font size and type can be adjusted freely.

(7) Advanced function

(a) Alarm function

- The History alarm can be classified alarm group and alarm list and selected alarm can be expressed by alarm search.
- The Flow alarm indicates current or the latest alarm at the bottom of screen.
- The System alarm indicates the important problems from operation.

(b) Logging function

- It provides conditional logging according to device condition and continuous periodic logging which operates periodically according to time and device status.
- It provides 255Kbyte areas for backup.
- Backup into CF card or USB storage device is available.
- Backup data's type is stored in Excel, it is easy to use.

(c) Recipe function

- It provides READ/WRITE function.
- A recipe provides Max. 100 DWORDs and 16 blocks.
- Backup into the CF card or USB storage device is available.
- Backup data's type is stored in Excel, it is easy to use.

(d) Scheduler function

- It can be set up to Max. 32.

(e) Print function

- It provides a Screen/Alarm print function.
- It can be printed by USB printer.

(f) Script function

- It provides more flexible function by user Script.
- It can be diversely applied to such as including Global/Object/Screen indication and so on.

(8) Stable product suitable for international standards

(a) CE, KC standard acquisition

(b) UL(cUL) standard acquisition

1.3 Terminology

It describes terms used in this manual.

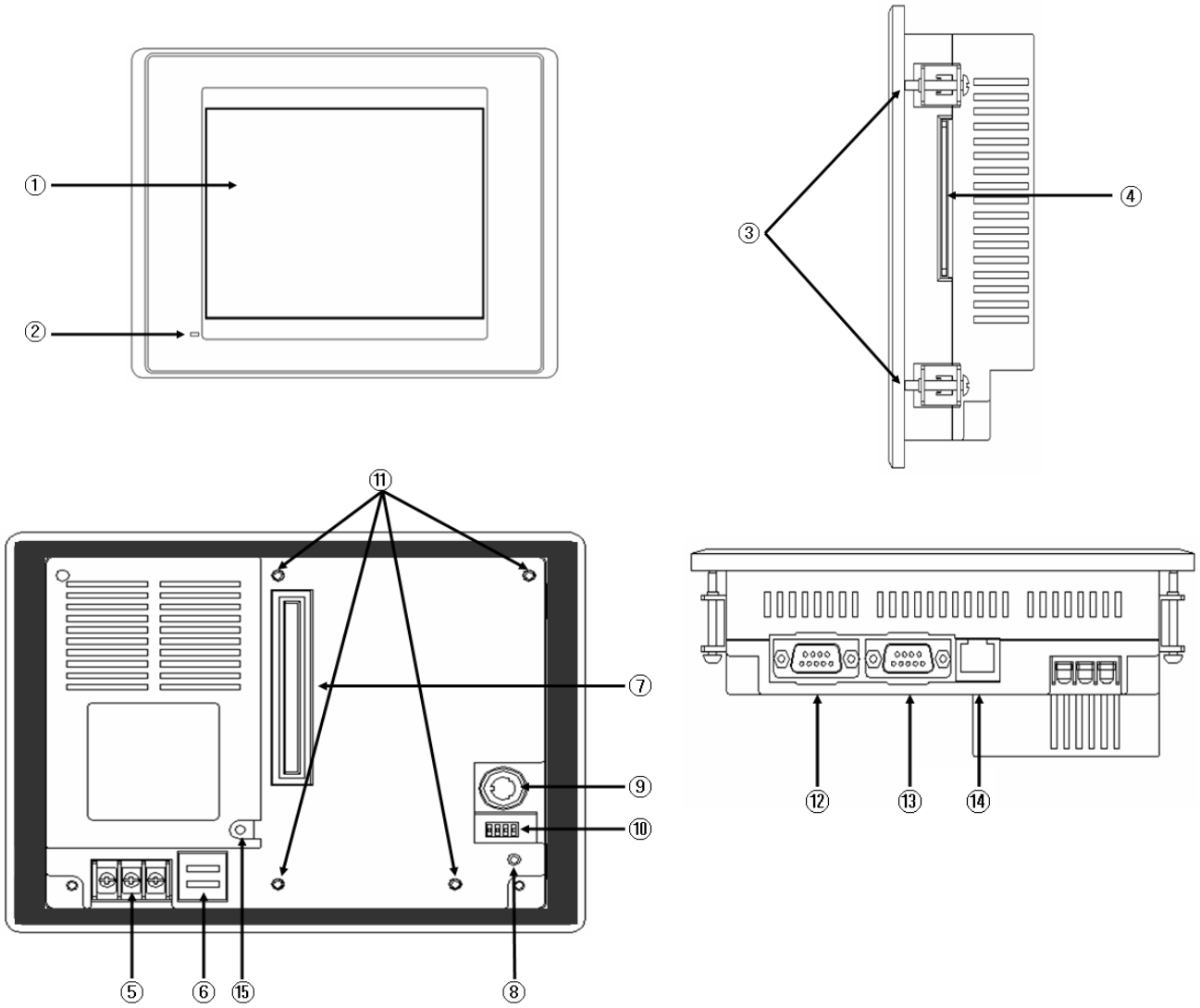
Term	Definition	Example
Module	A standard element that has a specified function which configures the system. Devices such as I/O board, which inserted onto the mother board or base unit.	Ex.) CPU module Power module, I/O module
Unit	A single module or group of modules that perform an independent operation as a part of PLC system.	Ex.) Basic unit, Extension unit
PLC system	System consisted of PLC and peripheral device which can be controlled by user program.	-
XP-Builder	Software used to write and edit the project.	-
Cnet module	Computer Link	-
FEnet module	Fast Ethernet Network	-
RTC	Abbreviation of 'Real Time Clock'. It is used to call general IC that contains clock function.	-

Chapter 2. System Configuration

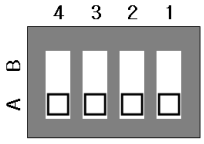
Here describes the feature of XGT Panel and system configuration.

2.1 Name and Function of Each Part

1. XP30-BTA, XP30/50/70/80-TTA



Number	Name	Description
①	Front view	1) Analog touch panel: User touch input 2) LCD: screen indication

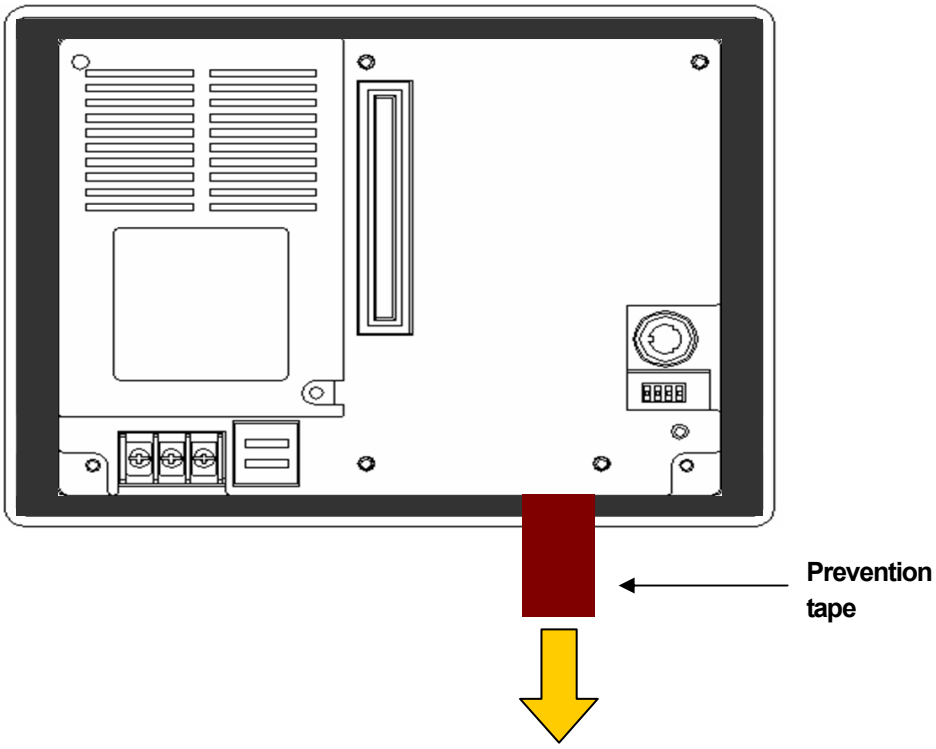
Number	Name	Description		
②	LED Status	Indicates operation status of device		
		Green	Normal RUN status (monitoring, downloading the project data) Initializing the status when booting (HMI does not operate)	
		Red	Error occurs (communication error, project data error)	
③	Panel fixed part	XGT Panel is fixed at panel by bracket.		
④	CF card interface	1) Logging/recipe/screen data backup 2) Upgrade of windows CE is available.		
⑤	Power connection terminal	It consists of power input and FG terminal.		
⑥	USB interface	It consists of 2 ports. 1) USB memory connection: logging/recipe/screen data backup 2) USB memory connection: project data transmission/backup 3) User interface connection: use of mouse/keyboard 4) Printer connection: printing is available		
⑦	Extension port	Extension module installation		
⑧	Reset switch	Hardware reset switch		
⑨	TOOL interface	RS-232C interface 1) project data transmission 2) logging/recipe/alarm/screen data backup 3) machine software upgrade		
⑩	Setting switch  	Device setting switch		
		No.1	Reserved	
		No.2	A setting	Normal operation (default)
			B setting	When upgrading Windows CE
		No.3	A setting	Watchdog On (default)
			B setting	Watchdog Off
		No.4	A setting	RS-422/485 Terminal Switch On (120Ω)
			B setting	RS-422/485 Terminal Switch Off (120Ω)
⑪	Extension module fixation hall	Extension module fixation hall		
⑫	RS-422/485 connector	RS-422/485: PLC/control machine communication		
⑬	RS-232C connector	RS-232C: PLC/control machine communication		
⑭	Ethernet terminal	Ethernet: 10Base-T / 100Base-TX 1) Project data transmission 2) logging/recipe/alarm/screen data backup 3) machine software upgrade 4) PLC/control machine communication		
⑮	FG terminal	FG terminal hole for extension module		

Remark

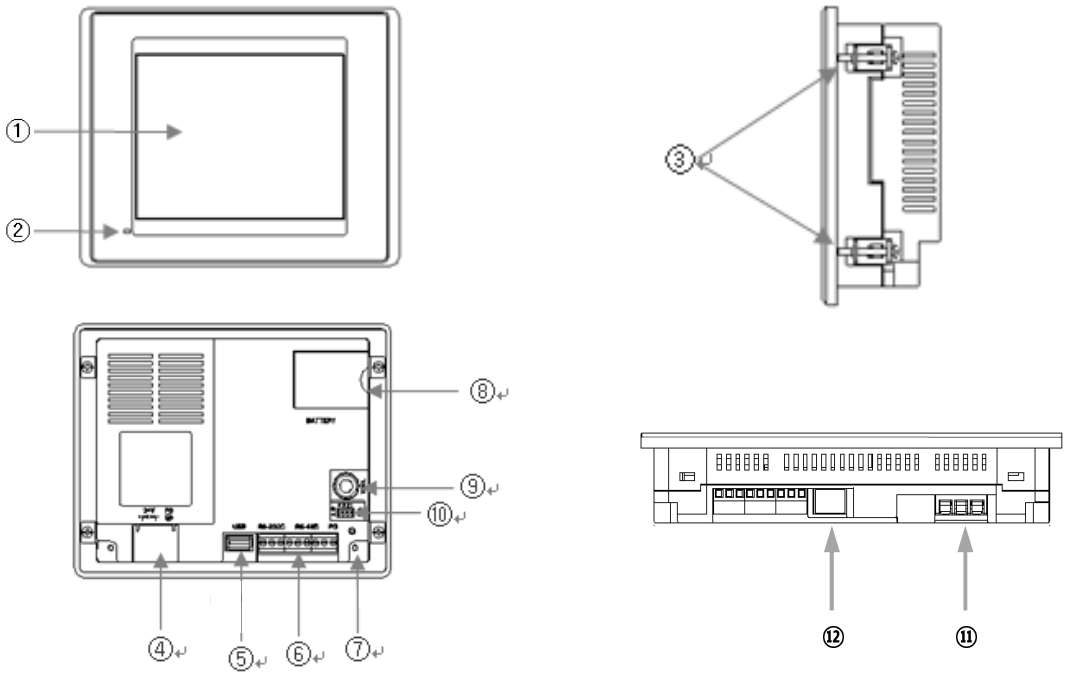
(1) For details about communication connection, please refer to the communication user manual.

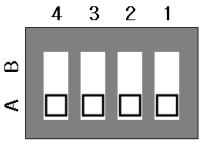
(2) For details about installation, please refer to the Chapter 10

When you use the XGT Panel, the prevention tape is installed to prevent battery discharge.
If you remove this prevention tape, backup is available.
In order to remove tape, pull tape downward like the following figure.



2. XP30-BTE, XP30-TTE, XP50-TTE, XP40-TTA(TTE)

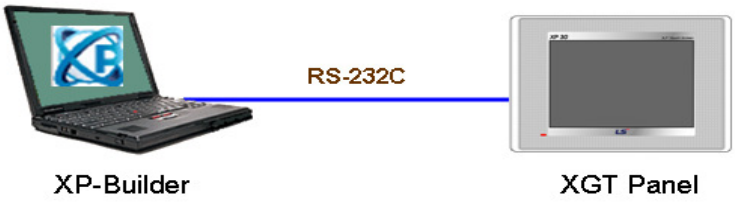


Number	Name	Description		
①	Front view	1) Analog touch panel: User touch input 2) LCD: screen display		
②	LED Status	Indicates operation status of module.		
		Green	Normal RUN status (monitoring, downloading the project data) Initializing mode when booting (HMI does not Ready)	
		Red	Error occurs (communication error, project data error)	
③	Panel fixed part	XGT Panel is fixed at panel by bracket.		
④	Power terminal cover	Prevention from electric shock		
⑤	USB interface	1) USB memory connection: logging/recipe/screen data backup 2) USB memory connection: project data transmission/backup 3) User interface connection: use of mouse/keyboard 4) Printer connection: printing is available		
⑥	Communication interface	RS-232C, RS-422/485: For communication with controller (PLC)		
⑦	Reset switch	Hardware reset switch		
⑧	Battery cover	Open or close when replacing the battery		
⑨	Tool interface	RS-232C interface 1) Project data transmission 2) Logging/recipe/alarm/screen data backup 3) Machine software upgrade		
⑩	Setting switch  	Module setting switch		
		No.1	Reserved	
		No.2	A setting	Normal operation (default)
			B setting	When upgrading Windows CE
		No.3	A setting	Watchdog On (default)
			B setting	Watchdog Off
		No.4	A setting	RS-422/485 Terminal Switch On (120Ω)
			B setting	RS-422/485 Terminal Switch Off (120Ω)
⑪	Power terminal	It consists of power input and FG terminal		
⑫	Ethernet terminal	Ethernet: 10Base-T / 100Base-TX 1) Project data transmission 2) logging/recipe/alarm/screen data backup 3) machine software upgrade 4) PLC/control machine communication ※ Supported on XP40-TTA		

2.2 System Configuration

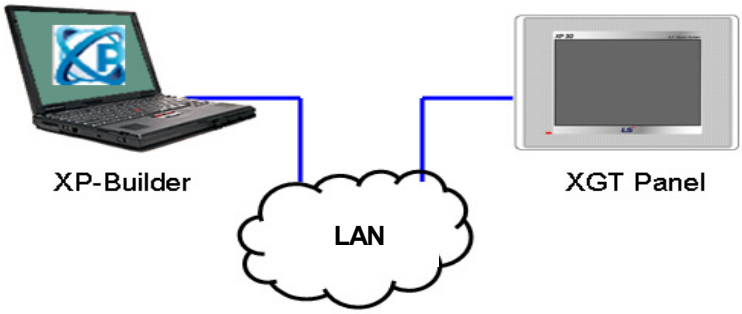
In order to use XGT Panel, write project data at the XP-Builder and transmit it to the XGT Panel.

XGT Panel can be basically connected through RS-232C.
Maximum communication speed is 115,200 [bps].

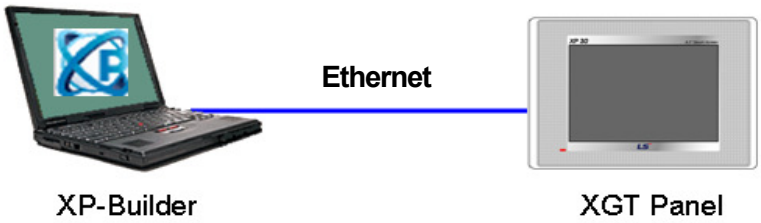


RS-232C communication speed is not fast so it takes long time to transmit project data into XGT Panel.

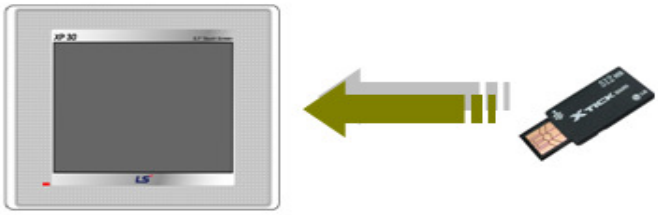
Project data can be quickly transmitted through Ethernet.
When LAN system is configured like the following figure, you can use it easily and effectively.



In case that LAN system is not configured, it provides 1:1 connection. (LAN cable should be cross cable.)



When communication is not available to transmit project data, USB storage device is available
For details, please refer to the Chapter.7 and XP-Builder user manual.



Remark

1) We recommend Ethernet more than RS-232C.
2) For the Ethernet cable manufacture, please refer to the communication manual.
3) For the project transmission method, please refer to the XP-Builder manual.
4) Ethernet is not supported on XP30-BTE, XP30-TTE, XP50-TTE and XP40-TTE.

Chapter 3. Standard Specification

3.1 General Standards

XGT Panel's general standard is as follows.

No.	Category	Standard				Related standard
1	Ambient operating temperature	0℃～+50℃				-
2	Storage temperature	-20℃～+60℃				-
3	Operating humidity	10～85%RH, non-condensing.				-
4	Storage humidity	10～85%RH, non-condensing.				-
5	Vibration resistance	Occasional vibration			count	-
		Frequency	Acceleration	Amplitude	10 times for each X, Y, Z axis	IEC 61131-2
		5 ≤ f < 9Hz	-	3.5 mm		
		9 ≤ f ≤ 150Hz	9.8㎧	-		
		Continuous vibration				
		Frequency	Acceleration	Amplitude		
		5 ≤ f < 9Hz	-	1.75 mm		
		9 ≤ f ≤ 150Hz	4.9㎧	-		
6	Shock endurance	* Maximum shock acceleration: 147㎧ (15G) * Duration time: 11㎳ * Pulse wave: half sine pulse (3 shocks per axis, on X, Y, Z axis)				IEC 61131-2
7	Noise Immunity	Square wave Impulse noise	AC: ±1,500V DC: ±1,000V			LSIS Standard
		Electrostatic discharge Immunity	±6 kV (Discharge by contact)			IEC 61131-2 IEC 61000-4-2
		Radiated electromagnetic field noise	80 ~ 1000 MHz, 10 V/m			IEC 61131-2 IEC 61000-4-3
		Fast transient & Burst noise	Category	Power module	Communication interface	IEC 61131-2 IEC 61000-4-4
			Voltage	2 kV	1 kV	
8	Environment	Free from corrosive gases and excessive dust				-
9	Operating height	Up to 2,000m (6,562 ft)				-
10	Pollution degree	Less than 2				-
11	Cooling method	Air-cooling				-

Remark

(1) IEC(International Electro technical Commission)
: International private group facilitating international cooperation of electric/electronic standardization, issuing international standards and operating the compliance evaluation systems.

(2) Pollution degree
: As an index representing the pollution degree of an environment to determine the insulation of a device, pollution degree 2 generally means the status generating non-conductive contamination. However, it also contains the status generating temporarily conduction due to condensation.

(3) Radiated electromagnetic field noise for XP30-BTE(TTE) is 80 ~ 1000MHz, 10 V/m
(All others are same as shown on the table)

(1) General Specification for XP40-TTA(TTE)

No.	Category	Standard				Related standard
1	Operating Temperature	0℃～+50℃				-
2	Storage Temperature	-20℃～+60℃				-
3	Operating Humidity	10～85%RH, non-condensing.				-
4	Storage Humidity	10～85%RH, non-condensing.				-
5	Vibration Resistance	Occasional vibration			count	-
		Frequency	Acceleration	Frequency	10 times for each X, Y, Z axis	IEC 61131-2
		5 ≤ f < 9Hz	-	5 ≤ f < 9Hz		
		9 ≤ f ≤ 150Hz	9.8㎧(1G)	9 ≤ f ≤ 150Hz		
		Continuous vibration				
		Frequency	Acceleration	Frequency		
		5 ≤ f < 9Hz	-	5 ≤ f < 9Hz		
		9 ≤ f ≤ 150Hz	4.9㎧(0.5G)	9 ≤ f ≤ 150Hz		
6	Shock Endurance	* Maximum shock acceleration: 147㎧ (15G) * Duration time: 11㎳ * Pulse wave: half sine pulse (3 shocks per axis, on X, Y, Z axis)				IEC 61131-2
7	Noise Immunity	Square wave Impulse noise	DC: ±800V			-
		Electrostatic discharge Immunity	±4kV (Contact discharge)			IEC61000-4-2
		Radiated electromagnetic field noise	80 ~ 1,000 MHz, 10 V/m			IEC61131-2 IEC61000-4-3
		Fast transient & Burst noise	Category	Power module	Communication interface	IEC61131-2 IEC61000-4-4
			Voltage	2 kV	1 kV	
8	Environment	Free from corrosive gases and excessive dust				-
9	Operating height	Up to 2,000m (6,562 ft)				-
10	Pollution degree	2 or less				-

11	Cooling method	Air-cooling	-

3.2 Function Standards

XGT Panel's function standard is as follows.

1. DC type

(1) 5.7 Inches Models

Item		XP30-TTE/DC	XP30-BTE/DC	XP30-BTA/DC	XP30-TTA/DC
Display type		TFT LCD	STN mono LCD		TFT Color LCD
Screen size		14 ㎝ (5.7")			
Display Resolution		320 x 240 pixel			
Color indication		256 Colors	8 step Gray Scale		65,000 Colors
Indication degree		Left/Right: 80 deg. Upper: 70 deg. Lower: 70 deg	Left/Right: 45 deg. Upper: 20 deg. Lower: 40 deg		Left/Right: 80 deg. Upper: 70 deg. Lower: 70 deg.
Backlight		LED Type			
Backlight duration		50,000 hours			
Contrast		-	Adjust through touch/parameter		-
Brightness		600cd/㎡	230cd/㎡		600cd/㎡
Touch panel		4 – Line type, analog			
Sound Output		Magnetic buzzer			
Process		ARM920T (32bit RISC), 200MHz			
Graphic accelerator		Hardware Accelerator			
Memory	Flash	16MB		32MB	
	Operating RAM	32MB		64MB	
	Backup RAM	128KB		512KB	
Backup data		Date/Hour data and Logging/Alarm/Recipe data			
Battery duration		Approx. 3 years (Operating ambient temperature of 25℃)			
Ethernet		-		1 Channel, IEEE802.3, 10Base-T/100Base-TX	
USB Host		1 Channel		2 Channels, USB 2.0 (printer, USB memory stick driver is available)	
RS-232C		Terminal Block		2 Channels	
RS-422/485		Terminal Block		1 Channel,RS-422/485 mode	
CF Card		-		1 Slot (Compact Flash)	
Expansion module		-		Option module is available	
Multi-language		Up to 8 language simultaneously			
Animation		GIF format is available			

Item	XP30-TTE/DC	XP30-BTE/DC	XP30-BTA/DC	XP30-TTA/DC
Recipe	available			
Data logging	available			
Script executor	available			
Certifications	CE, UL, KC			
Protection standard	IP65F			
Dimension (mm)	181 x 140 x 56.5		181 x 140 x 66.5	
Panel cut (mm)	156 x 123.5		156 x 123.5	
Rated voltage	DC24V (Actual Range: 19.2 ~ 28.8V)			
Power consumption (W)	5		8.5	
Weight(Kg)	0.62		0.75	

(2) 7 Inches Models

Item		XP40-TTE/DC	XP40-TTA/DC
Display type		TFT Color LCD	
Screen size		7” (17.7㎝)	
Display Resolution		800 x 480 pixel	
Color indication		256 Colors	65,536 Colors
Indication degree		Left/Right: 65 deg. Upper: 50 deg. Lower: 60 deg.	
Backlight		LED (Replaceable)	
Backlight duration		Above 30,000 hours	
Brightness		280cd/㎡	
Touch panel		Analog	
Sound Output		Magnetic Buzzer	
Process		ARM920T (32bit RISC), 200MHz	
Graphic accelerator		Hardware Accelerator	
Memory	Flash	16MB	32MB
	Operating RAM	32MB	64MB
	Backup RAM	128KB	512KB
Backup data		Date/Hour data and Logging/Alarm/Recipe data	
Battery duration		Approximately 3 years (Operating ambient temperature of 25℃)	
Ethernet		-	1 Channel, IEEE802.3, 10Base-T/100Base-TX
USB Host		1 Channels, USB 2.0 (printer, USB memory stick driver is available)	
RS-232C		Terminal Block	
RS-422/485		Terminal Block	

Item	XP40-TTE/DC	XP40-TTA/DC
Multi-language	Up to 8 language simultaneously	
Animation	GIF format is available.	
Recipe	Available	
Data logging	Available	
Script executor	Available	
Certifications	CE, UL(cUL), KC	
Protection standard	IP65F	
Dimension (mm)	203.5x153.5x41.5	
Panel cut (mm)	192 x 138	
Rated voltage	DC24V (19.2 ~ 28.8V)	
Power consumption (W)	Less than 4.5	Less than 5
Weight(Kg)	0.80	0.81

(3) 8.4/10.4/12.1 Inches Models

Item		XP50-TTE/DC	XP50-TTA/DC	XP70-TTA/DC	XP80-TTA/DC
Display type		TFT Color LCD			
Screen size		21 ㎝(8.4”)		26 ㎝(10.4”)	31㎝(12.1”)
Display Resolution		640 x 480 pixel			800 x 600 pixel
Color indication		256 Color	65,000 Color		
Indication degree		Left/Right: 45 deg. Upper: 20 deg. Lower: 20 deg.	Left/Right: 65 deg. Upper: 50 deg. Lower: 60 deg.	Left/Right: 65 deg. Upper: 45 deg. Lower: 65 deg.	Left/Right: 65 deg. Upper: 45 deg. Lower: 75 deg.
Backlight		CCFL (Replacement is available), Supporting automatic On/Off			
Backlight duration		50,000 hr.			
Brightness		200cd/㎡	480cd/㎡	430cd/㎡	400cd/㎡
Touch panel		8 Line, analog			
Sound Output		Magnetic buzzer			
Process		ARM920T (32bit RISC), 200MHz			
Graphic accelerator		Hardware Accelerator			
Memory	Flash	16MB	32MB		
	Operating RAM	32MB	64MB		
	Backup RAM	128KB	512KB		
Backup data		Date/Hour data and Logging/Alarm/Recipe data			
Battery duration		Approx. 3 years (Operating ambient temperature of 25℃)			
Ethernet		1 Channel, IEEE802.3, 10Base-T/100Base-TX			
USB Host		1 Channel	2 Channels, USB 2.0 (printer, USB memory stick driver is available)		
RS-232C		Terminal Block	2 Channels		

Item	XP50-TTE/DC	XP50-TTA/DC	XP70-TTA/DC	XP80-TTA/DC
RS-422/485	Terminal Block	1 Channel, RS-422/485 mode		
CF Card	-	1 Slot (Compact Flash)		
Expansion module	-	Option module is available		
Multi-language	Up to 8 language simultaneously			
Animation	GIF format is available			
Recipe	available			
Data logging	available			
Script executor	available			
Certifications	CE, UL, KC			
Protection standard	IP65F			
Dimension (mm)	240 x 174 x 63	240 x 174 x 73	317 x 243 x 73	
Panel cut (mm)	228.0 x 158.0		294.5 x 227.5	
Rated voltage	DC24V (Actual Range: 19.2 ~ 28.8V)			
Power consumption(W)	13	20	27	30
Weight(Kg)	1.2	1.4	2.2	2.4

Remark

(1) Notice in connecting with power
: Connecting AC power to the device using DC power may cause product break or fire. Be careful when connecting
(2) FG connection
: Use ⑤FG terminal (Chapter 2.1) for FG of the device. ⑮FG (Chapter 2.1) is for FG terminal of extension card. (Except XP30-BTE, XP30-TTE and XP50-TTE)
(3) Prevention tape of Battery discharge
: There is prevention tape is to prevent the battery discharge. In order to use backup, remove the prevention tape.
(4) Battery operation and duration
: Battery is used to reserve backup data and RTC (data/time) when power is off.
Because battery is used when power is off, battery is not consumed when power is on.
(5) LCD Backlight replacement
: XP40-TTA(TTE)/DC, XP50-TTA(TTE)/DC, XP70-TTA/DC, XP80-TTA/DC, LCD backlight is replaceable. However in XP30-BTE/DC, XP30-TTE/DC, XP30-BTA/DC and XP30-TTA/DC, LCD backlight is not replaceable because LCD and backlight is all-in-one type.

2. AC Type

(1) 10.4/12.1/15 Inches Models

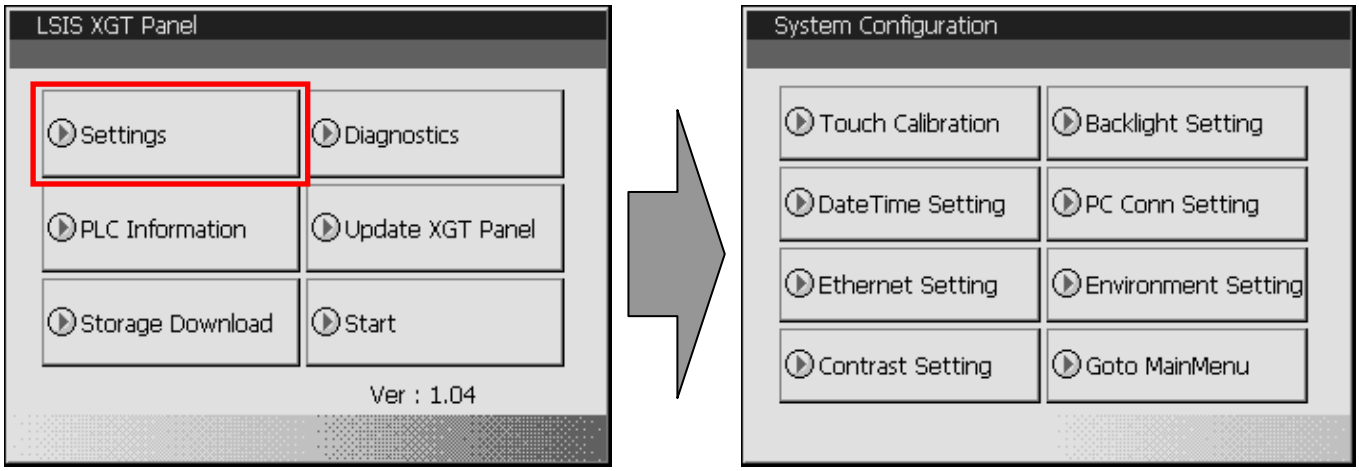
Item		XP70-TTA/AC	XP80-TTA/AC	XP90-TTA/AC
Display type		TFT Color LCD		
Screen size		26cm (10.4”)	31cm (12.1”)	38cm (15”)
Display Resolution		640 x 480 pixel	800 x 600 pixel	1024 x 768 pixel
Color indication		65,000 Color		
Indication degree		Left/Right: 65 deg. Upper: 45 deg. Lower : 65 deg.	Left/Right: 65 deg. Upper: 45 deg. Lower : 75 deg.	Left/Right: 75 deg Upper : 50 deg Lower : 60 deg
Backlight		CCFL (Replacement is available), Supporting automatic On/Off		
Backlight Duration		50,000 hr.		
Contrast		-		
Brightness		430cd/㎡	400cd/㎡	450cd/㎡
Touch Panel		8 Line, analog		
Sound Output		Magnetic buzzer		
Process		ARM920T (32bit RISC), 200MHz		
Graphic Accelerator		Hardware Accelerator		
Memory	Flash	32MB		64MB
	Operating Ram	64MB		128MB
	Backup Ram	512KB		
Backup data		Date/Hour data and Logging/Alarm/Recipe data		
Battery duration		Approx. 3 years (Operating ambient temperature of 25℃)		
Ethernet		1Channel, IEEE802.3, 10Base-T/100Base-TX		
USB Host		2 Channels, USB 2.0 (printer, USB memory stick driver is available)		
RS-232C		2 Channels		
RS-422/485		1 Channel,RS-422/485 mode		
CF Card		1 Slot (Compact Flash)		
Expansion Module		Option module is available		
Multi-language		Up to 4 language simultaneously		
Animation		GIF format is available		
Recipe		available		
Data logging		available		
Script executor		available		
Certification		CE, UL, KCC		
Protection standard		IP65F		
Dimension (mm)		317 x 243 x 73		395 x 294 x 73
Panel cut (mm)		294.5 x 227.5		383.5 x 282.5
Rated voltage		AC100~240V		
Power consumption (W)		37	40	46
Weight (Kg)		2.2	2.4	3.9

Remark

(1) Notice in connecting with power
: If you connect DC power to the device using AC power, the product doesn't work. Please be careful when connecting.
(2) FG connection
: Use ⑤FG terminal (Chapter 2.1) for FG of the device. ⑮FG (Chapter 2.1) is for FG terminal of extension card.
(Except XP30-BTE , XP30-TTE and XP50-TTE)
(3) Prevention tape of Battery discharge
: There is prevention tape is to prevent the battery discharge. In order to use backup, remove the prevention tape.
(4) Battery operation and duration
: Battery is used to reserve backup data and RTC (data/time) when power is off.
Because battery is used when power is off, battery is not consumed when power is on.
(5) LCD Backlight replacement
: In XP70-TTA/AC, XP80-TTA/AC, XP90-TTA/AC, LCD backlight is replaceable.

Chapter 4. System Configuration

It describes the system configuration including XGT Panel's time setting, Ethernet connection setting, and connection with PC and backlight.
If you press [Settings] button in XGT Panel's basic screen, you can set XGT Panel's environment as follows.

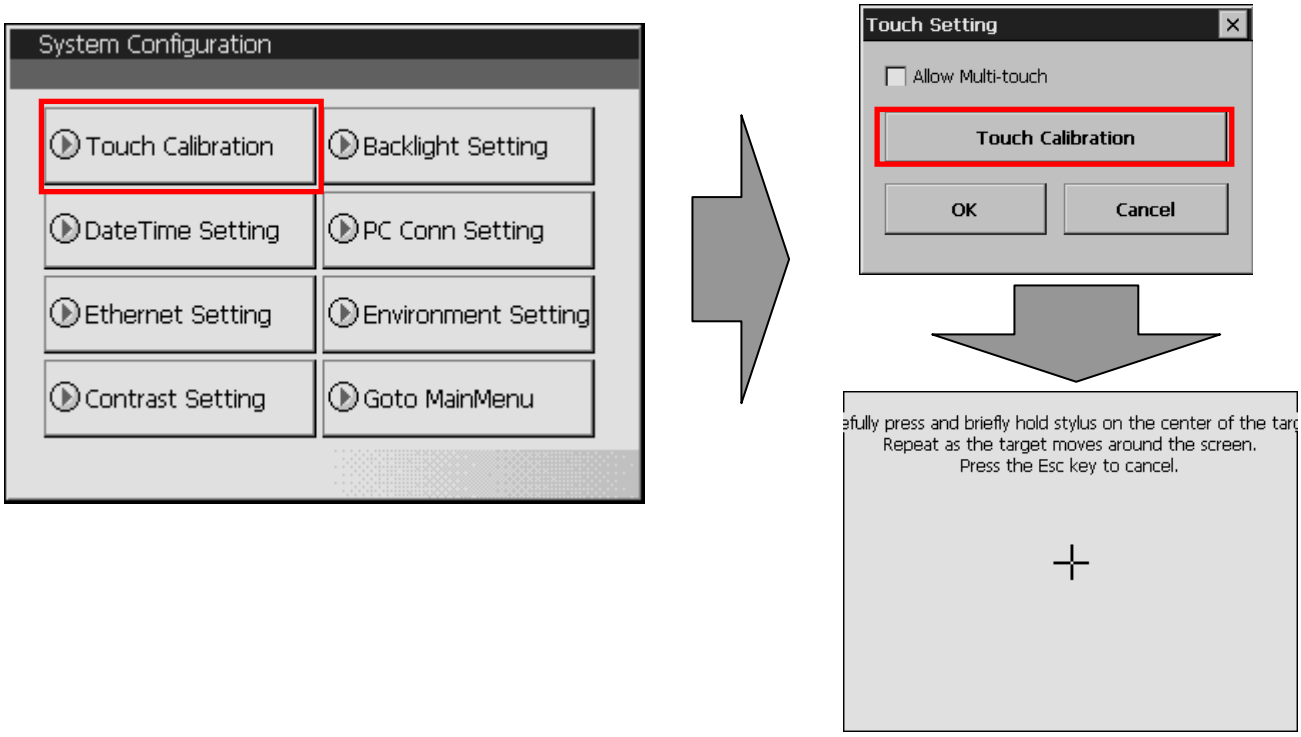


XGT Panel's basic screen

XGT Panel's System Configuration screen

4.1 Touch Calibration

When the location is not recognized in XGT Panel, Touch's scale can be adjusted in XGT Panel. If you press [Touch Calibration] button in System Configuration, the setting screen shows up. If you press five '+' marks, XGT Panel's touch location adjustment is completed.



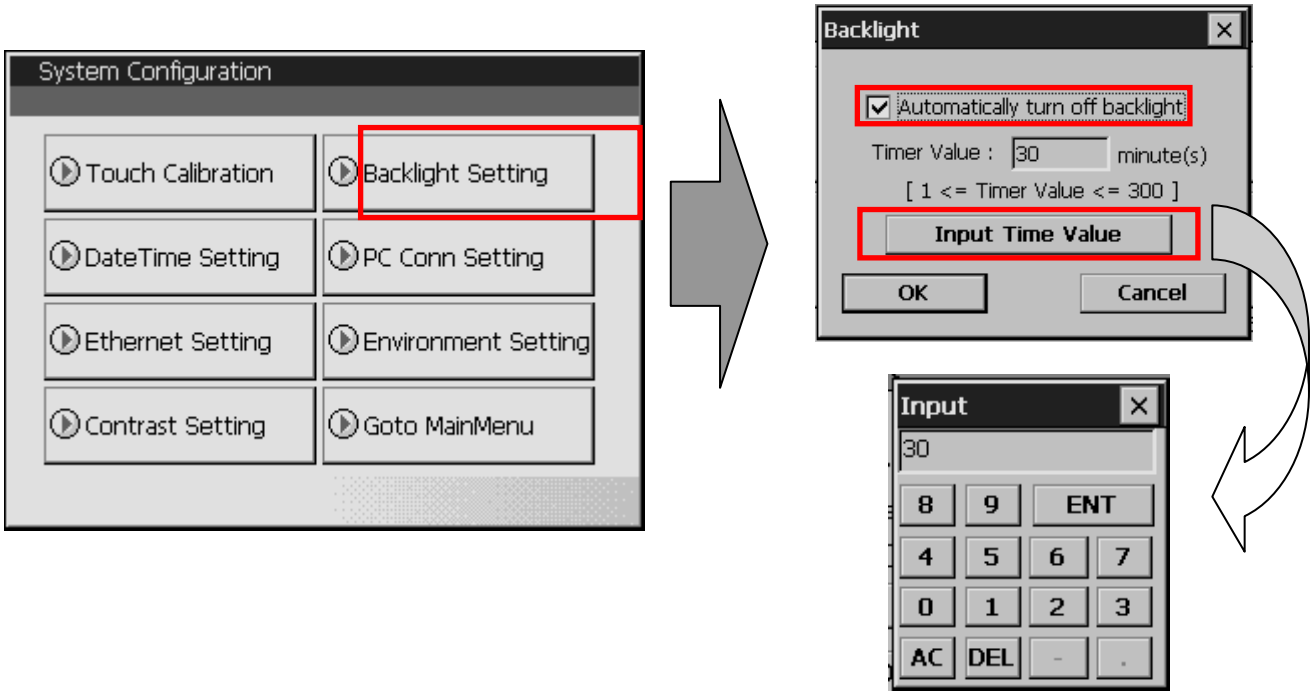
If you press two points simultaneously while [Allow Multi-touch] is selected, XGT Panel recognizes as if middle point between two points is selected. If you press two points simultaneously while [Allow Multi-touch] is not selected, XGT Panel recognizes as if any point is not selected.

Remark

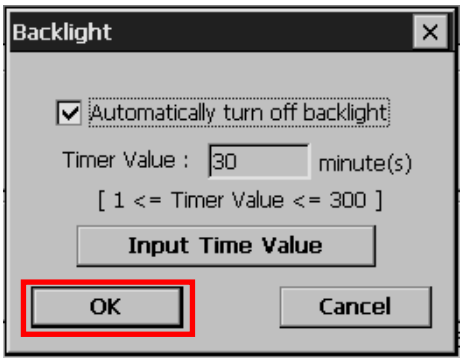
(1) XGT Panel's Touch Calibration setting is basically set. If Touch location error is big, adjusting menu with touch can be hard through touch. In that case, You can select the Touch Calibration setting menu by USB mouse.
(2) When touch location changes in using, redo touch setting.
(3) If you don't allow Multi-touch, sensitivity is lower than when allowing Multi-touch.

4.2 Backlight Setting

If you press [Backlight Setting] button in [System Configuration] screen as follows, setting screen shows up.



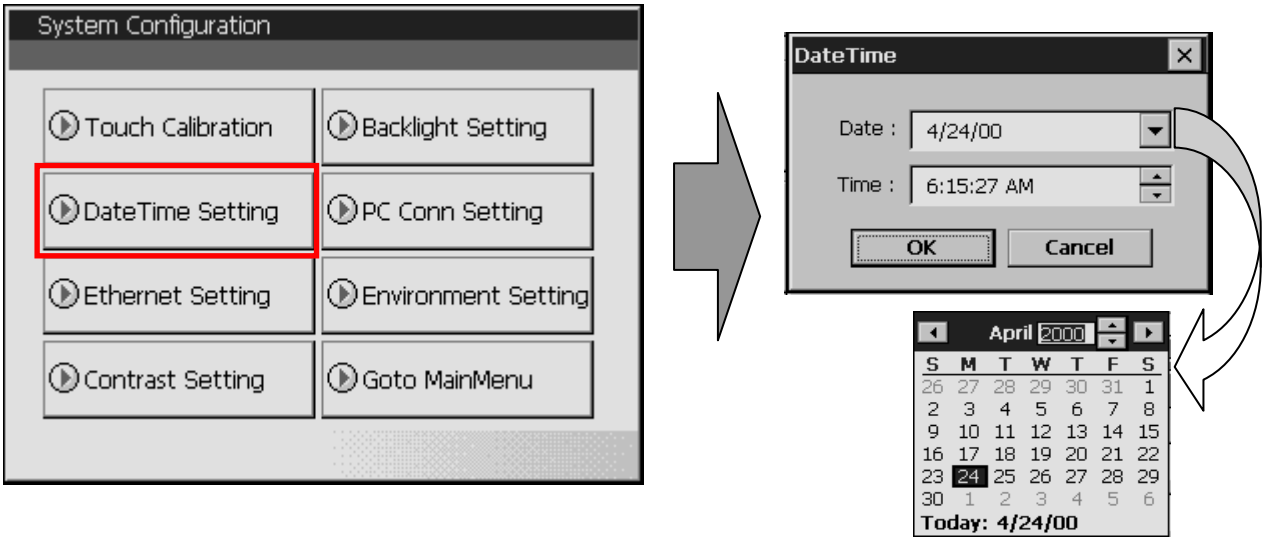
Against no use for long time through XGT Panel, you can set 'Automatically turn off backlight' function.
Set whether you use backlight automation On/Off function or not and time, then press OK button as follows.



As above, if you input 30, the backlight automatically turns off after 30 minute later. In off status, if you touch the panel, the backlight turns on.

4.3 Date Time Setting

If you press [DateTime Setting] button in [System Configuration] as follows, you can set XGT Panel's data and time.

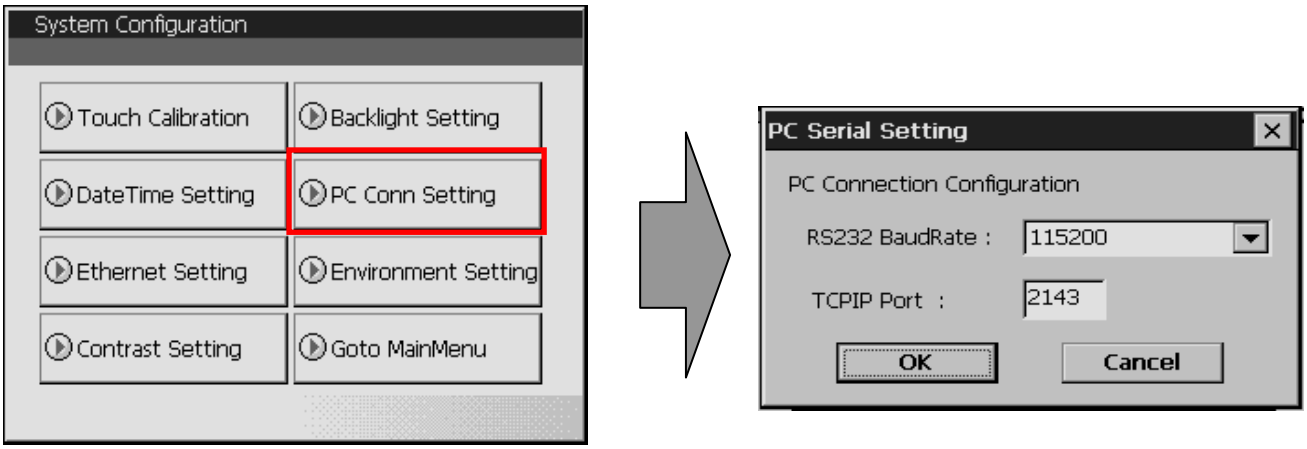


Remark

You can set data/time at device information of communication dialog at the XP-Builder.
For details, please refer to the XP-Builder's manual.

4.4 PC Connection Setting

If you press [PC Conn Setting] button in [System Configuration] screen as follows, you can set RS-232C and TCP/IP's port number to communicate with PC.

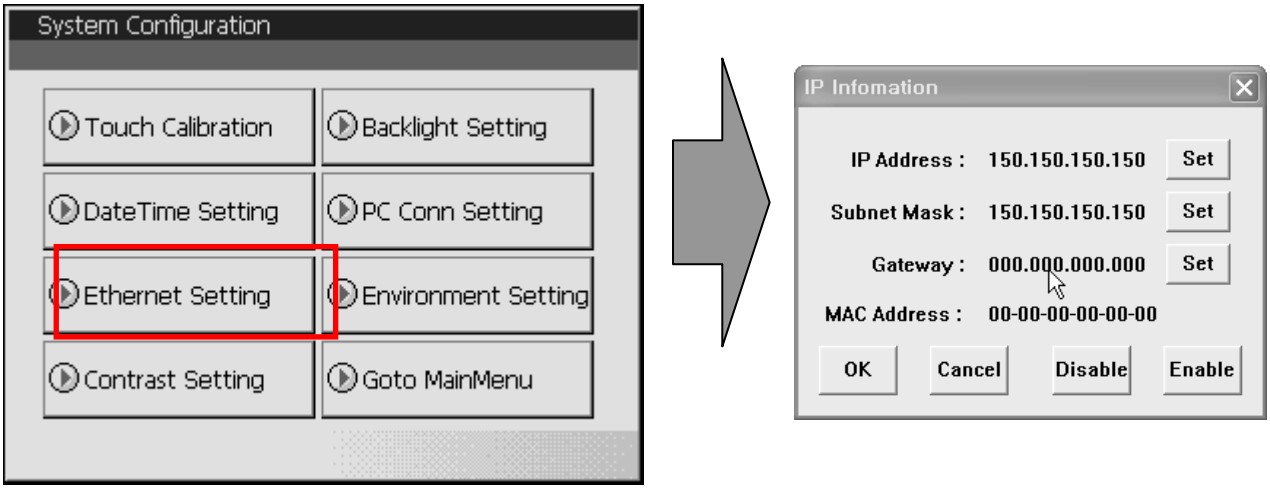


Remark

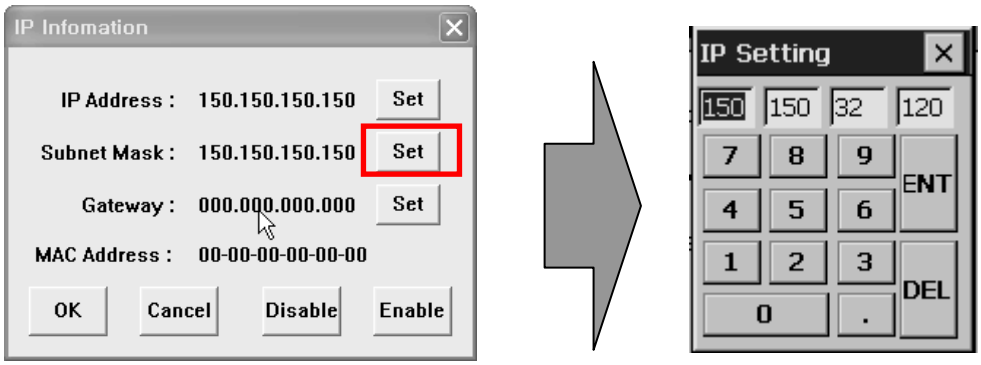
The condition is set as the above. No other setting is required. But in case of changing RS-232C's communication speed, change as above.

4.5 Ethernet Setting

If you press [Ethernet Setting] button in [System Configuration] screen as follows, you can change IP to use Ethernet.



You can change IP address by pressing [Set] button of each IP address, Subnet Mask and Gateway. By pressing OK button, changed IP information is reserved.



Remark

We recommend the following method, when connecting with PC solely.

1) XGT Panel setting
- IP Address : 192.168.0.10
- Subnet Mask: 255.255.255.0
- Gateway : 192.168.0.1

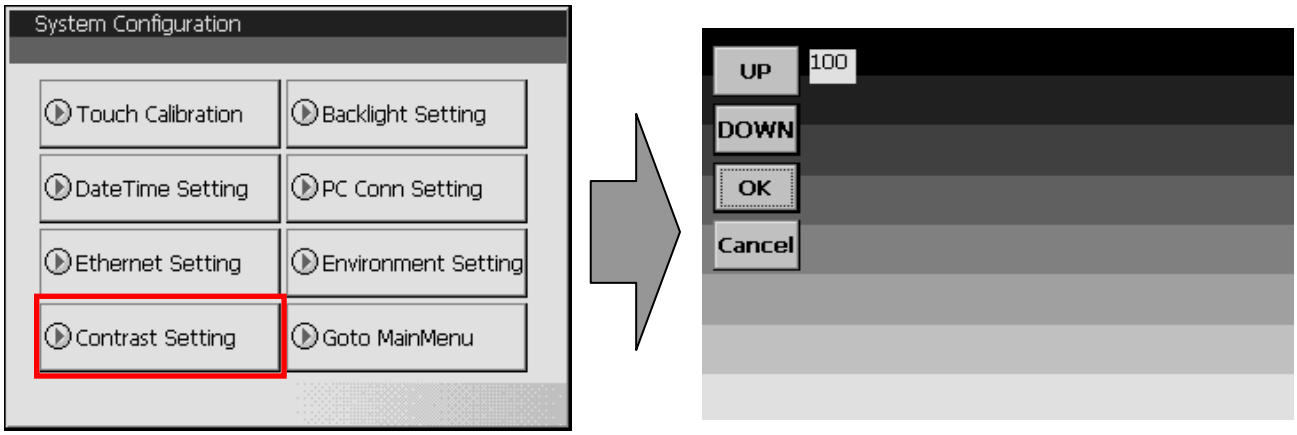
2) PC setting
- IP Address : 192.168.0.11
- Subnet Mask: 255.255.255.0
- Gateway : 192.168.0.1

Ethernet is not supported on XP30-BTE

If you reboot after pressing [Disable] button, the device will not use Ethernet. In this case, booting speed gets faster. If you use Ethernet again, reboot after pressing [Enable].

4.6 Contrast Setting (only for XP30-BTA(BTE)/DC)

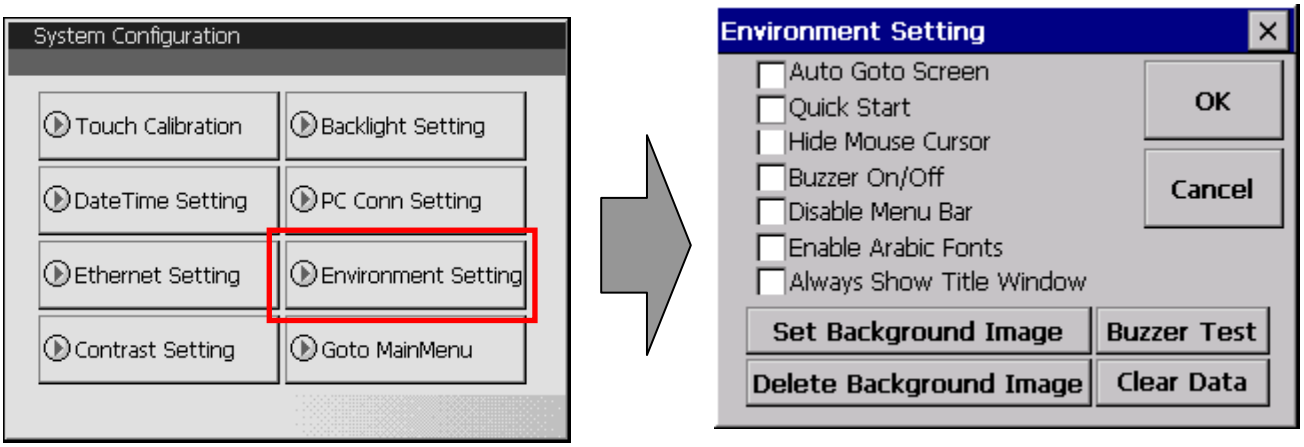
If you press [Contrast Setting] button on [System Configuration] screen, you can adjust mono LCD's Contrast.



UP button increase Contrast, DOWN button decrease Contrast. Contrast value is between 0~100.
Adjustment is only available for mono type XP30-BTA/BTE
Adjustment is available during operation.
If you press the screen for 3 second, Con. shows up. You can adjust contrast by pressing Con. button.

4.7 Environment Setting

If you press [Environment Setting] button in [System Configuration] screen as follows, you can set 'Auto Goto Screen' and 'Buzzer On/Off'.



When setting [Auto Goto Screen], XGT Panel is rebooted. Or when downloading the edit data is completed, the screen automatically shows up. If you cancel this setting, the user should press 'Start' button in order to move to the screen.
If you select [Quick Start], when starting screen, screen shows promptly without showing progress bar because it doesn't caching the image in advance. However, if you select this option, first screen shows slowly. Especially, if there are many animation objects in screen, it may take several seconds based on image. But fast screen switching is available since second screen switching.

If you select [Hide Mouse Cursor], mouse cursor doesn't show after screen switching
You can set whether you use buzzer through [Buzzer On/Off] button.

If you set [Disable menu Bar], the menu bar basically provided to go out from monitoring screen to the waiting screen doesn't show. In this case, if you want to go out to the waiting screen, you have to use the special switch to close the monitoring screen.

If you select the image through [Set Background Image], background image of waiting screen is set as the selected image. If you want to cancel, press [Delete Background Image]

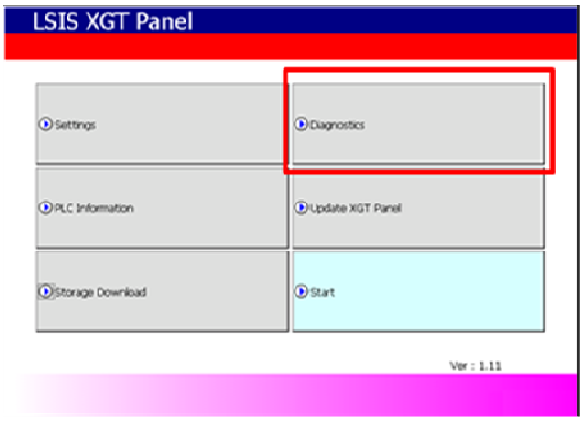
If you select [Clear Data], all files downloaded by the user are deleted. If connection password is set, you have to input the password. This password is connection password needed for project download, etc. You can set that password in [Communication] → [XGT Panel Information] → [Password] tap. The deleted files are user project file, web server, VNC start module, option card driver, RAPIEnet communication setting data, XP-manager setting data and etc. Setting through Environment Setting menu of device is not initialized.

Remark

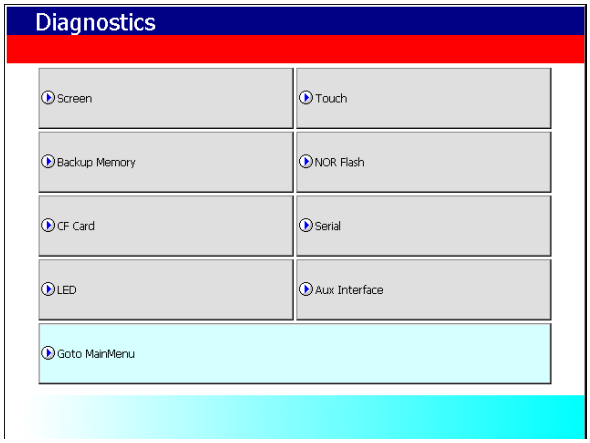
The buzzer can be set at the machine information tap of communication conversation box.
Please refer to the XP-Builder's manual.

Chapter 5. Diagnostics

It describes the diagnosis function for XGT Panel's communication terminal, screen and touch function.
If you press [Diagnostics] button on the XGT Panel's basic screen, the menu for diagnosis shows up.



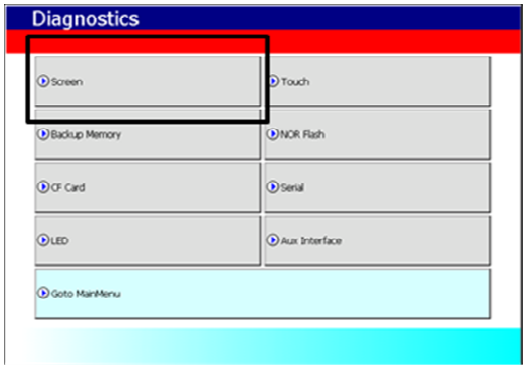
XGT Panel's basic screen



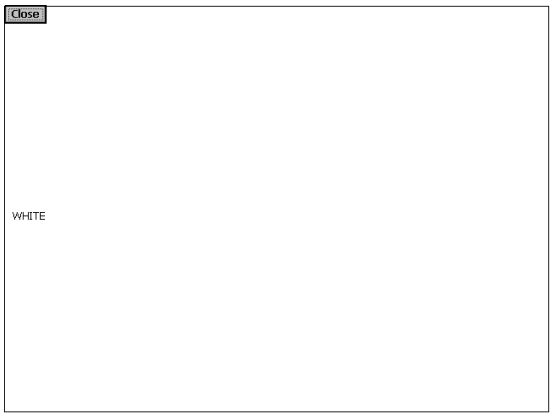
XGT Panel's environment setting screen

5.1 Screen Diagnosis

If you press [Screen] button, screens continuously change into diverse color with buzzer. For XP30-BTA/DC product, screen changes into 8 steps' light. After all screen for diagnosis pass. Then, Close button shows up with white ground.
If you press Close button, the initial screen shows up.



XGT Panel's XGT Panel diagnosis screen

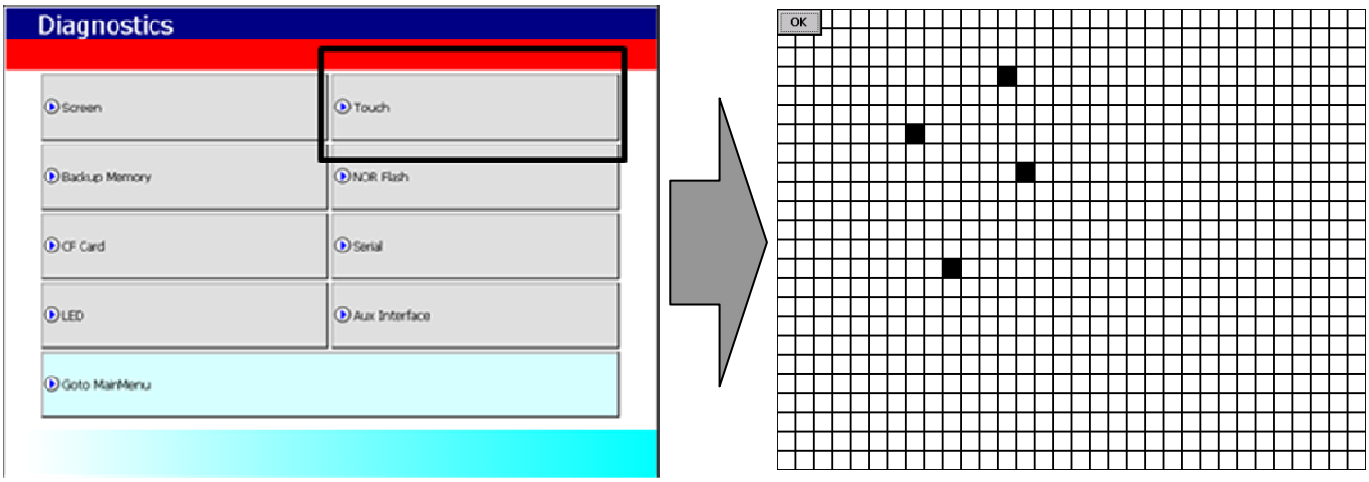


Screen when XGT Panel's screen diagnosis

Item	XP30-BTA(BTE)	XP30-TTA(TTE)	XP40-TTA(TTE)	XP50-TTA(TTE)	XP70-TTA	XP80-TTA	XP90-TTA
Display	BLACK > 8 Gray steps Scale screen > WHITE	RED > GREEN > BLUE > BLACK > WHITE					

5.2 Touch Diagnosis

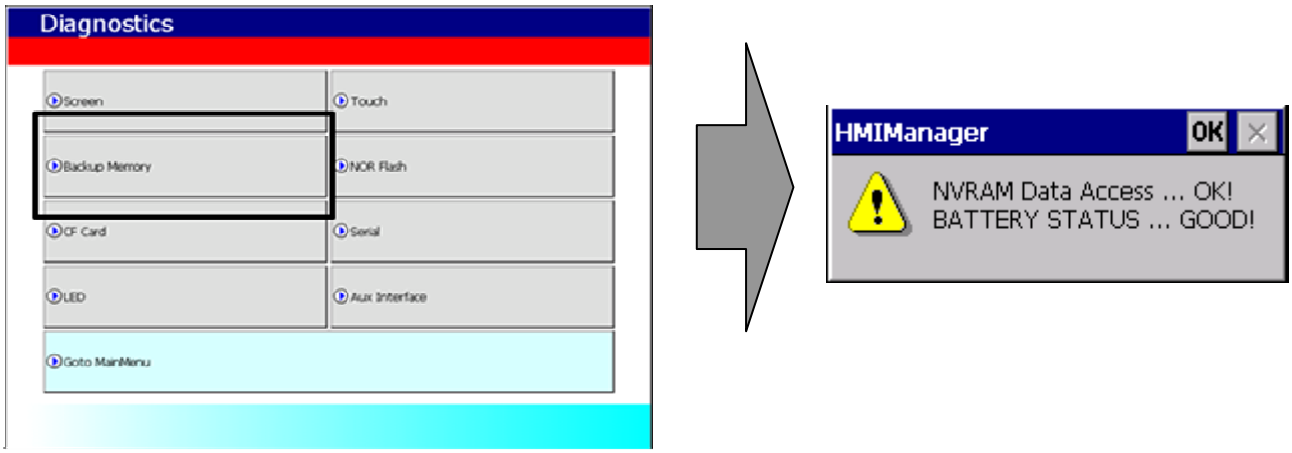
If you touch the screen, the touched location is displayed as follows. If pressing the [OK] button, you can quit the screen.



If the touched location is not correct, reset the Touch setting. For detailed information, please refer to the Chapter 4. System Configuration.

5.3 Backup Memory Diagnosis

If you press [Backup Memory] button, you can see the result of diagnosis in the result windows.



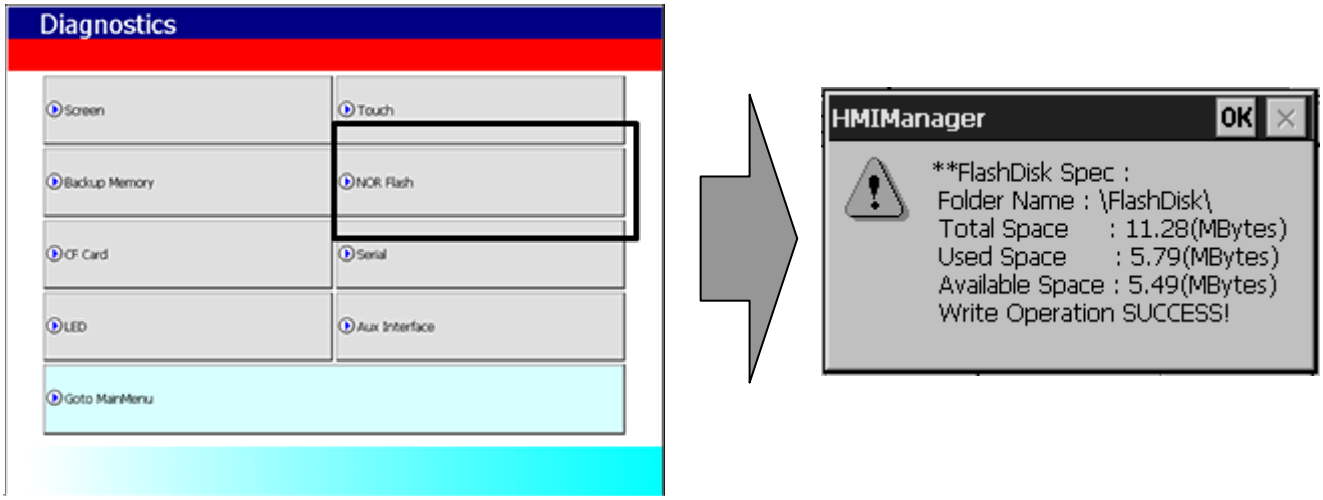
Remark

(1) If 'NVRAM Data Access … Fail' error is occurred, please contact with customer service center.

(2) If 'BATTERY STATUS … BAD' error is occurred, battery should be changed. Please contact with Customer service center.

5.4 Flash Memory Diagnosis Function

If you press [NOR Flash] button, you can see the result of diagnosis in the result widows.

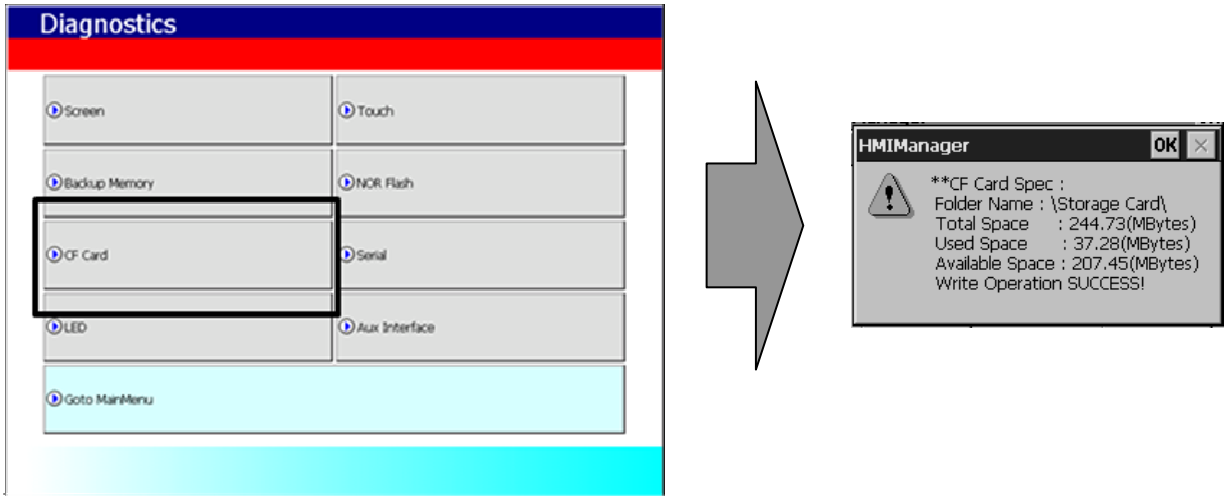


Remark

If 'Read Disk Information Error!' occurs, please contact with Customer service center.

5.5 CF Card Diagnosis

If you press [CF Card] button, the result of diagnosis shows up in the result windows.

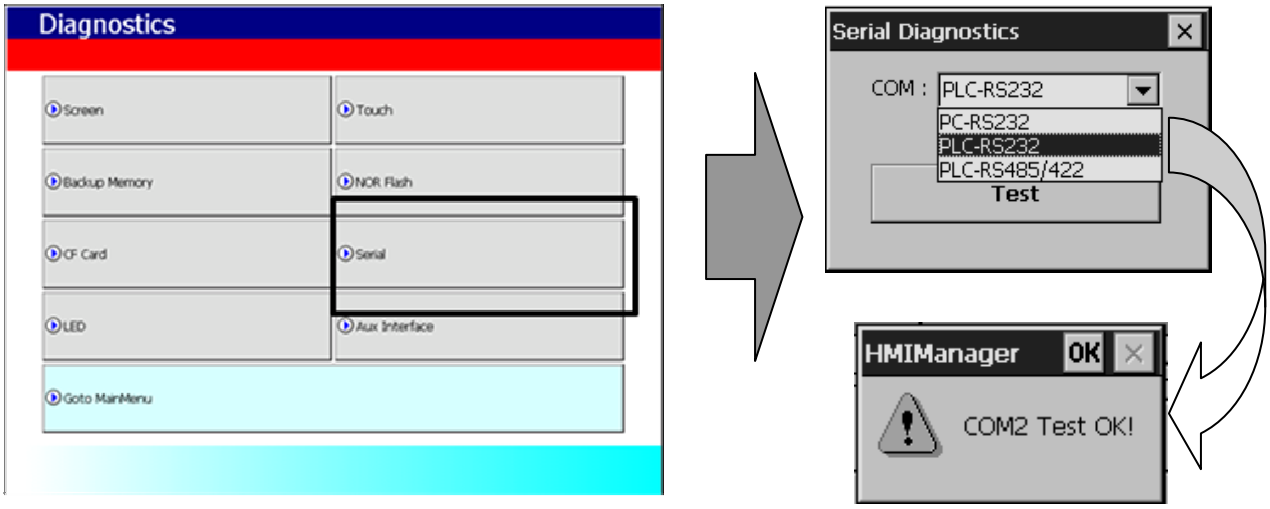


Remark

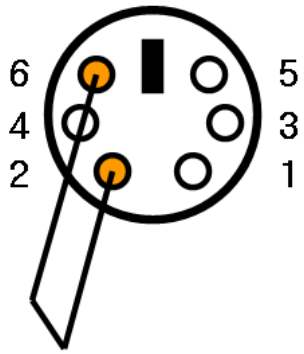
If 'Read Disk Information Error!' occurs, please contact with Customer service center.
CF Card is not supported on XP30-BTE, XP30-TTE, XP50-TTE, XP40-TTA(TTE)

5.6 Serial Communication Diagnosis

If you press [Serial] button, you can diagnose Serial ports which is equipped at XGT Panel.
(In case of diagnosis purpose, you have to connect the loop-back terminal at each port.)

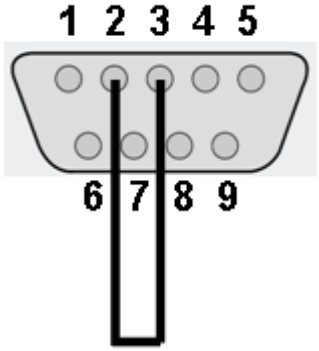


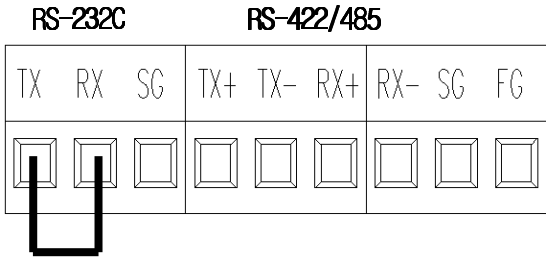
The followed feature is Loop Back terminal. In case of communication diagnosis, connect as followed feature.
The tool port terminal should be made as follows.



(Connect the No.2 and 6 pin)

The RS-232C port terminal should be made as follows

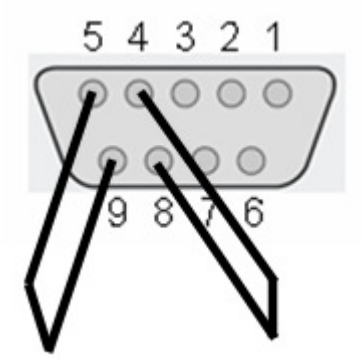


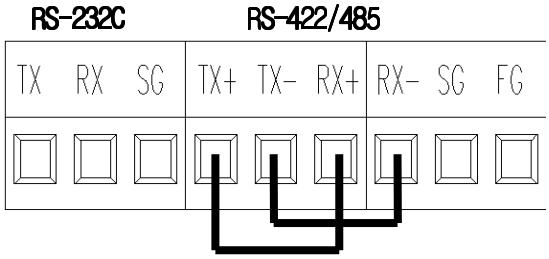


. (Connect the No.2 and 3 pin)

(Connect the TX and RX)

The RS-422/485 port terminal should be made as follows.



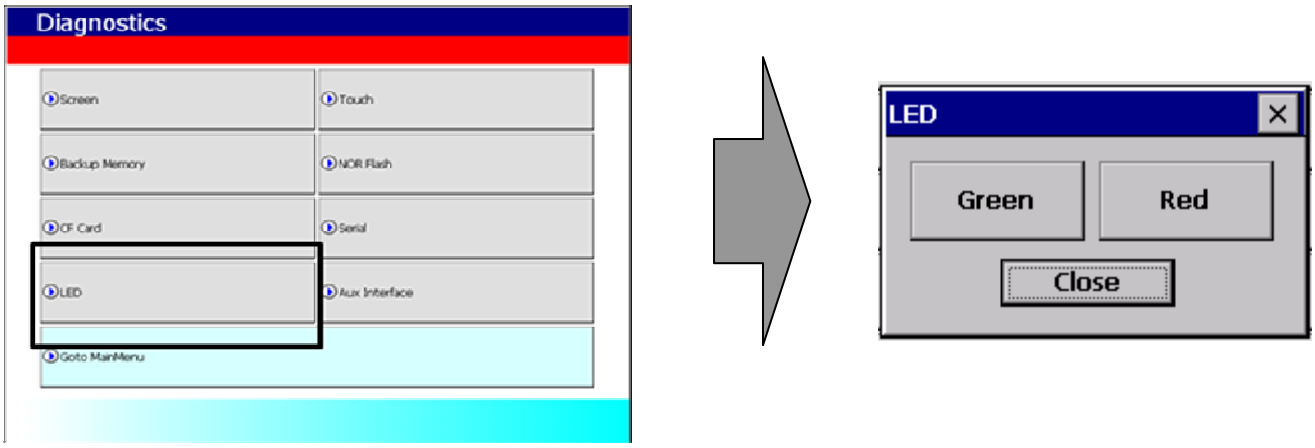


(Connect the Pin No.4 with 8 and Pin No. 5 with 9)

(Connect the TX+ with RX+ and TX- with RX-)

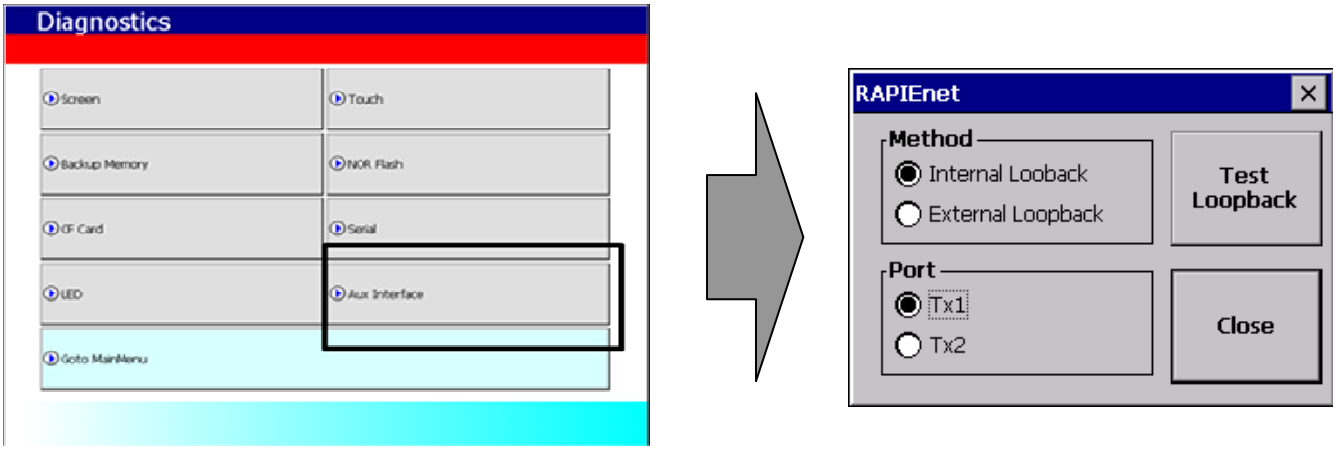
5.7 LED Diagnosis

If you press [LED] button, you can check whether LED is converted into designated color or not at the bottom of XGT Panel.



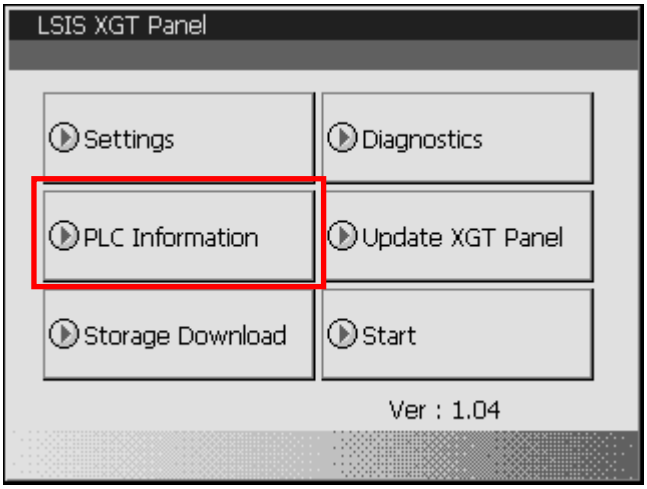
5.8 AUX Diagnosis

If you press [Aux Interface] button, you can check the functions of card that is currently connected.
※Not supported on following models: XP30-BTE(TTE), XP50-TTE, XP40-TTA(TTE)



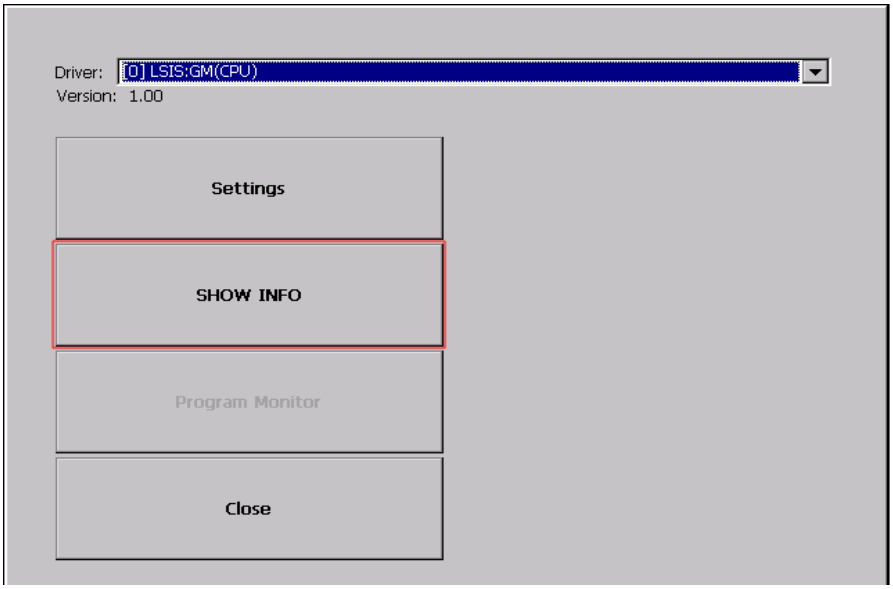
Chapter 6 Viewing Information of PLC Connection Status

You can see the diverse information including XGT Panel's and PLC's CPU information through View PLC Connection Status Information.



[Method]

(a) Select [PLC Information] in the menu.
(b) Select the designated PLC. The listed PLC is the same as connection number which is set at [Common - Project Property Setting – PLC/Device settings] in XP-Builder.



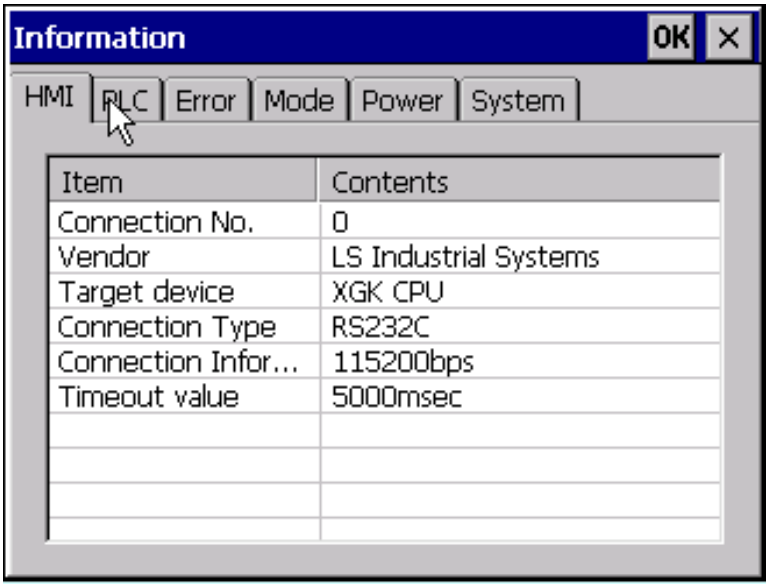
(c) Press [SHOW INFO]
(d) You can check the connection information of XGT Panel, information of PLC CPU, history of error, mode conversion, PLC power cut and system.

Remark

You can check the status of PLC connection after project data is transmitted into XGT Panel.

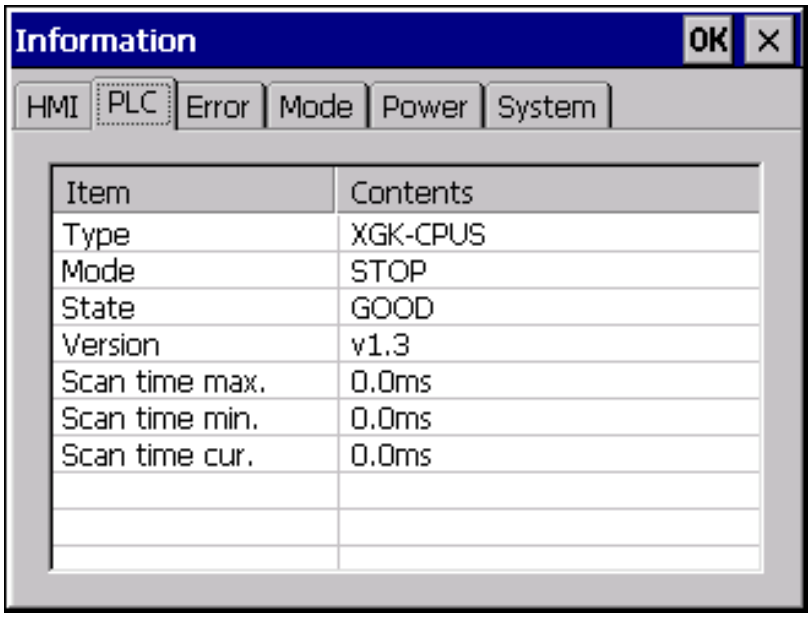
6.1 Connection Information

You can check the setting items for the connection with PLC such as Vender of PLC, Target device, Connection type, Connection information and Timeout value in the XP-Builder.



6.2 PLC Information

You can check CPU type of PLC, operation mode, state, version, and scan time.

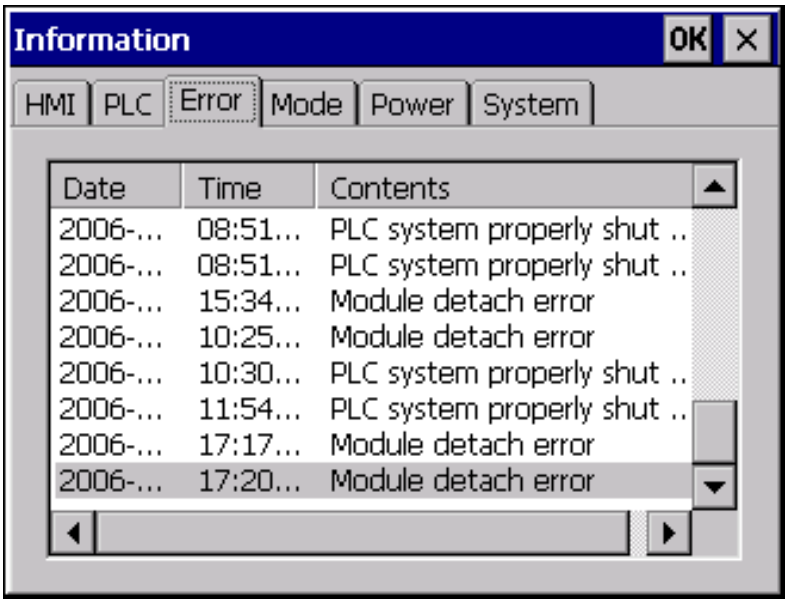


Remark

The following PLC is available for view of PLC information.
- MASTER-K CPU, FEnet, Cnet
- GLOFA-GM CPU, FEnet, Cnet
- XGK/XGB/XGI CPU, FEnet, Cnet

6.3 History of PLC Error

You can check the PLC Error History.

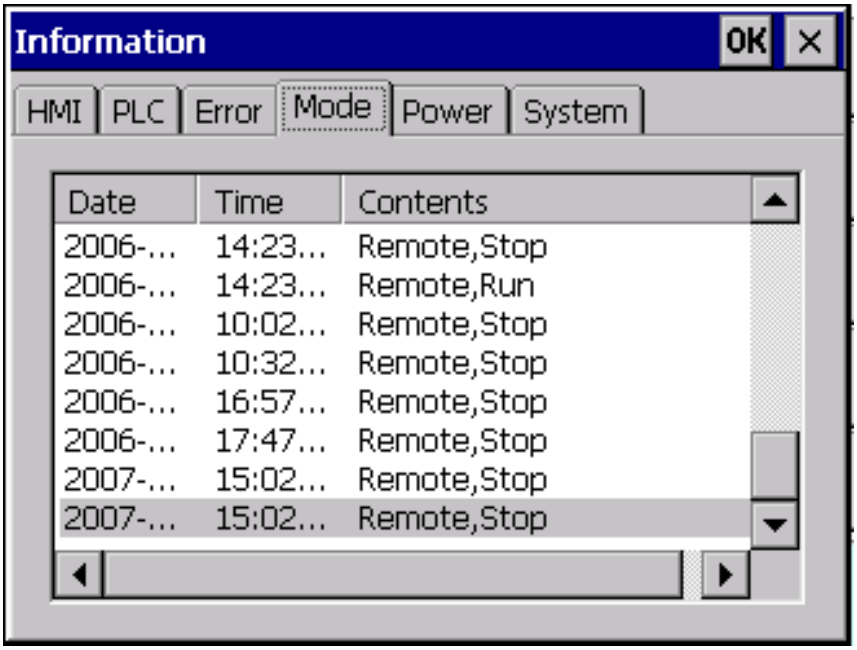


Remark

The following PLC is available for viewing Error History.
- MASTER-K CPU doesn't have the Error History.
- GLOFA-GM CPU
- XGK/XGI CPU
- XGB CPU doesn't have the Error History.

6.4 History of PLC Mode Conversion

You can check the history about our PLC's RUN/STOP operation mode.



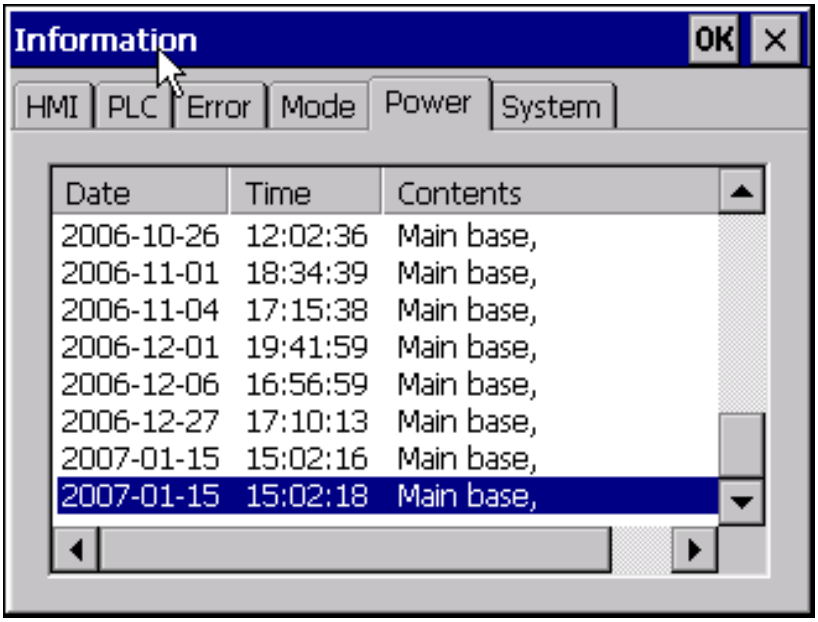
Remark

The following PLC is available for viewing PLC operation mode conversion history.

- MASTER-K CPU doesn't have the history about operation mode conversion.
- GLOFA-GM CPU
- XGK/XGI CPU
- XGB CPU doesn't have the history about operation mode conversion.

6.5 History of PLC Power

You can check the history about when PLC was turned on and off

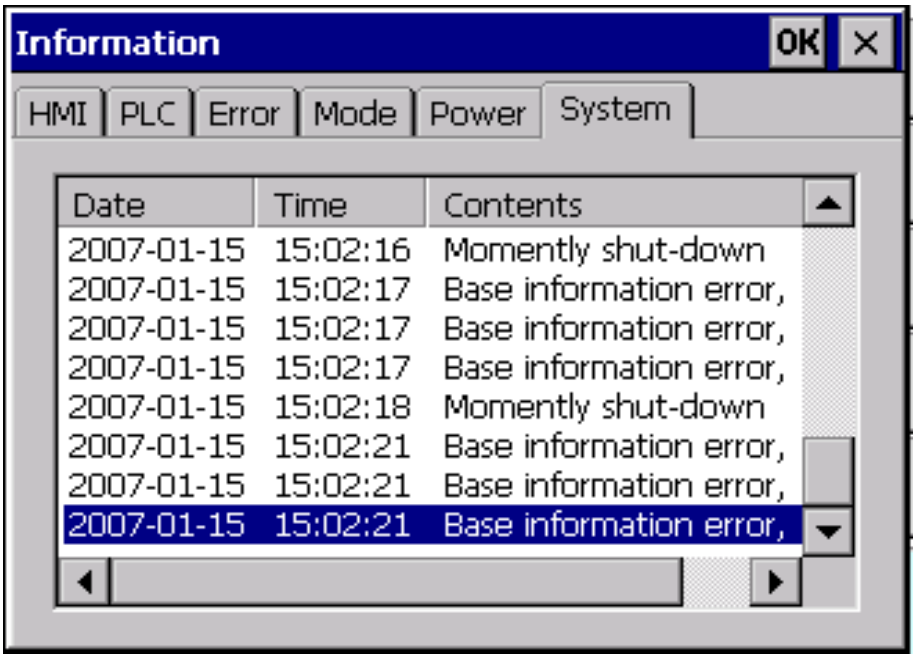


Remark

The following PLC is available for viewing the history of when our PLC was turned off and on.
- MASTER-K CPU doesn't have the history about when our PLC was turned on and off.
- GLOFA-GM CPU
- XGK/XGI CPU
- XGB CPU doesn't have the history about when our PLC was turned on and off.

6.6 History of PLC System

You can check history about PLC system.



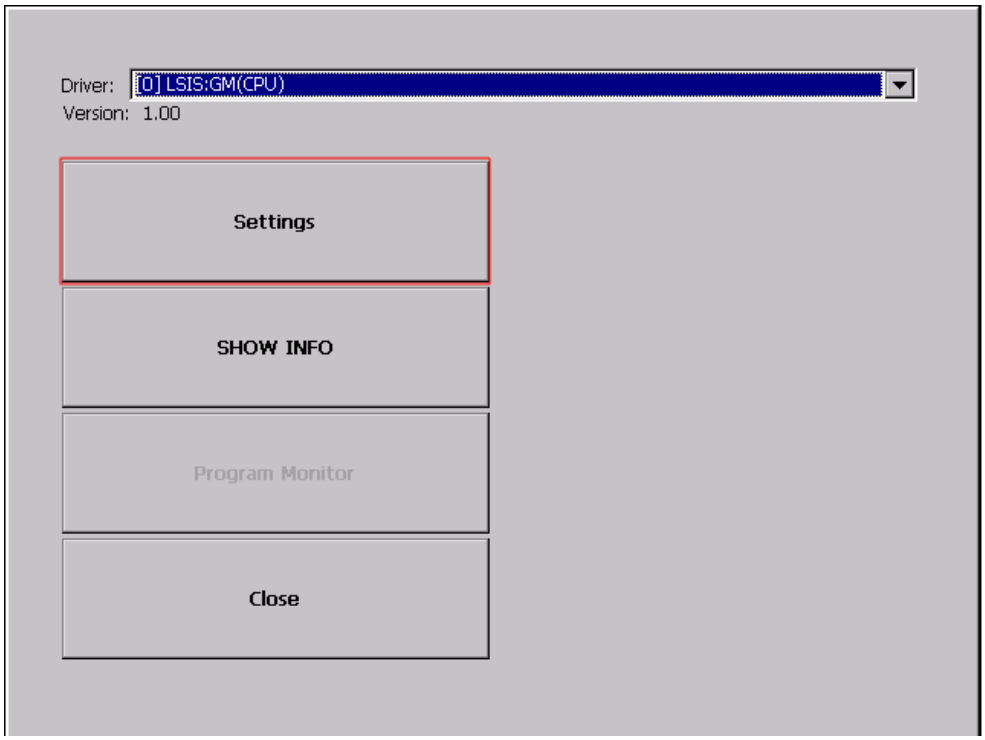
Remark

The following PLC is available for viewing history about system.

- MASTER-K CPU doesn't have the history about system.
- Only GLOFA-GM CPU (GM4C) has the history about system. Other CPUs don't have the history about system.
- XGK/XGI CPU
- XGB CPU doesn't have the history about system.

6.7 PLC Communication Configuration Settings

You can select [Settings] button to change PLC communication settings



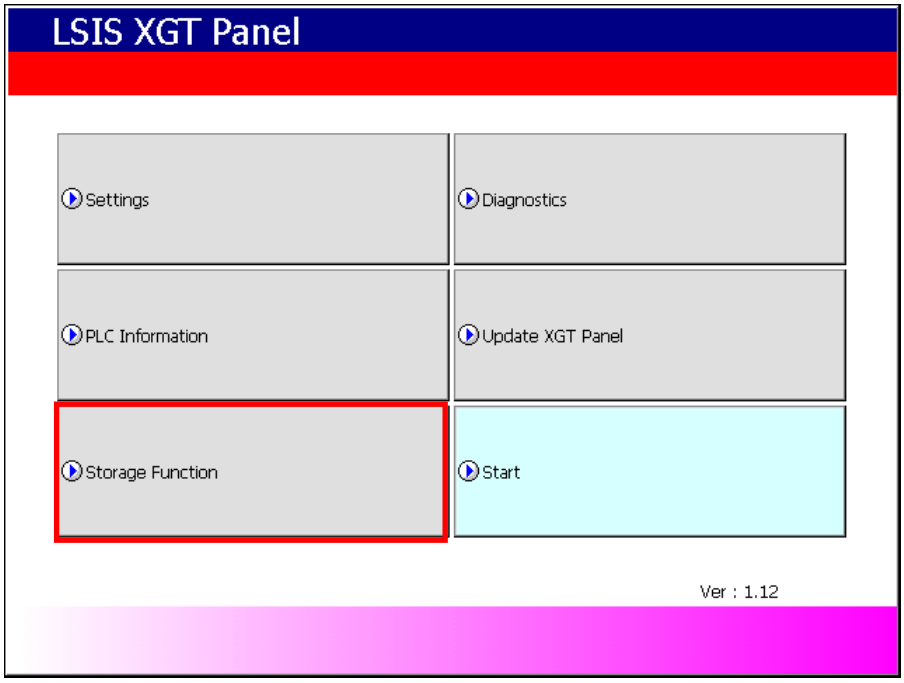
Remark

- For further information about the settings, please refer to the PLC user manual.
- [Program Monitor] button is activated in case of LSIS PLC Direct Driver

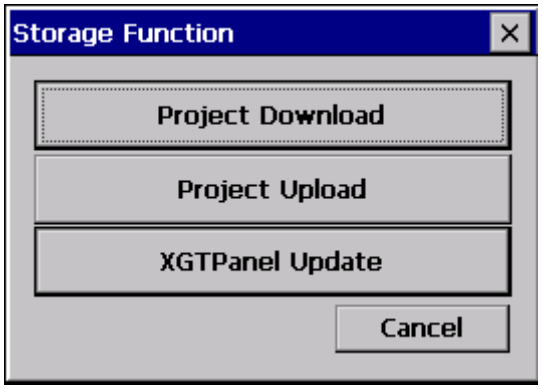
Chapter 7 Storage Function

7.1 General Introduction

Downloading the user project made in XP-Builder from PC, uploading the project stored in the device to PC, updating the device and etc are available through connection with XGT Panel with Serial cable or Ethernet cable generally. However, when those connections are not available, you can use CF card, USB storage equipment



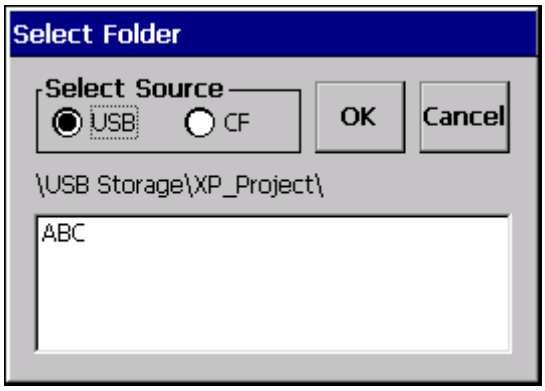
1. If you touch [Storage Function], the following dialog box shows.



2. In case of downloading the project by using CF card or USB storage equipment, touch [Project Download] button.
3. In case of transmitting the project data stored in the device to CF card or USB storage equipment, touch [Project Upload] button.
4. In case of updating the XGT Panel with XGT Panel Software stored in CF card or USB Storage equipment, touch [XGT Panel Update]

7.2 Downloading Project through the Storage Equipment

1. If you touch [Project Download], the following dialog shows.

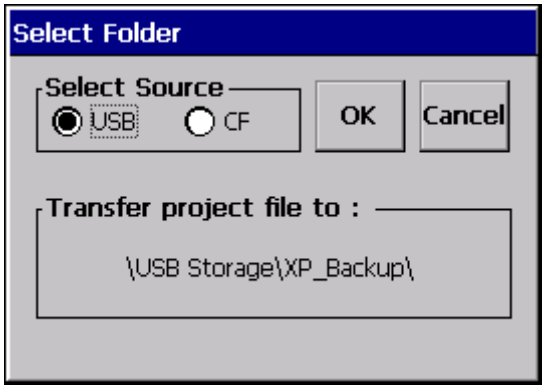


2. In case of selecting [USB], the directory list under the path, \USB Storage\XP_Project\ shows. In case of selecting [CF], the directory list under the path, \Storage Card\XP_Project\ shows. In case of downloading the project by using storage equipment, the project should be saved in the one lower directory between those two directories.

3. Select one among directory lists and touch [OK]. Then downloading will start.

7.3 Uploading Project through the Storage Equipment

1. If you touch [Project Upload], the following dialog shows.



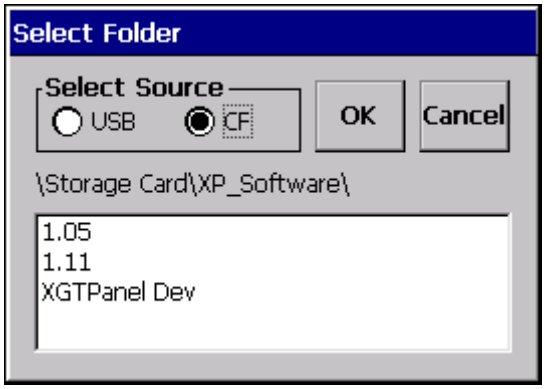
2. In case of selecting [USB], the path, \USB Storage\XP_Backup\, shows. In case of selecting [CF], the path, \Storage Card\XP_Backup\, shows. Select one between two.

3. If you touch [OK] button, project backup file is transmitted to the selected path.

4. The project backup file is saved when Download project backup file is selected when downloading the project.
If you don't select, project backup file is not saved in the device and transmission to the storage equipment is not available.

7.4 Updating the Device through Storage Equipment

1. If you touch [Project Upload], the following dialog shows.



2. In case of selecting [USB], the directory list under the path, \USB Storage\XP_Project\ shows. In case of selecting [CF], the directory list under the path, \Storage Card\XP_Project\ shows. In case of updating the device by using storage equipment, the XGT Panel Software project should be saved in the one lower directory between those two directories.

3. If you touch [OK] button, the device is updated with XGT Panel Software in the designated path.

⚠ Notice

(1) Do not remove USB storage equipment or turn off the device during operation. It may cause abnormal installation of project data.
(2) Do not remove or move the directory except CF or USB storage equipment. It may cause abnormal operation.

Chapter 8 XGT Panel S/W Update

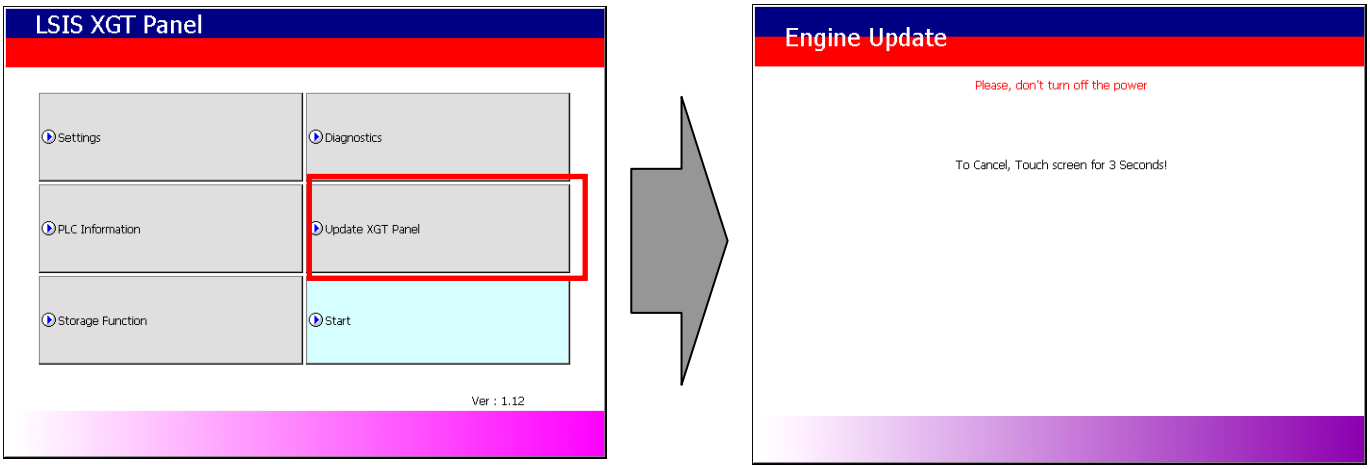
8.1 General Introduction

It describes the function for updating the XGT Panel software.

New function is added to XGT software, you need to update a version of XGT Panel
Please refer to the following.

[Method]

Select [Upgrade -> Update XGT Panel] on the XGT Panel's main screen. Then XGT Panel becomes update mode. In order to return to the main screen, touch a screen for 3 seconds.



After downloading XGT Panel software from LSIS website, make a temporary folder and save it.

Designate the folder where the software will be saved in the XP-Builder's [XGT Panel Update] windows and update XGT Panel by [Send] menu. For more detailed information about XP-Builder, please refer to the XP-Builder user manual.

Remark

Do not remove communication cable or turn off the device during updating. It may cause the malfunction.

Chapter 9 File Backup through External Storage Equipment

Describes on management function about external storage equipment saving backup data of logging, recipe, and screen image

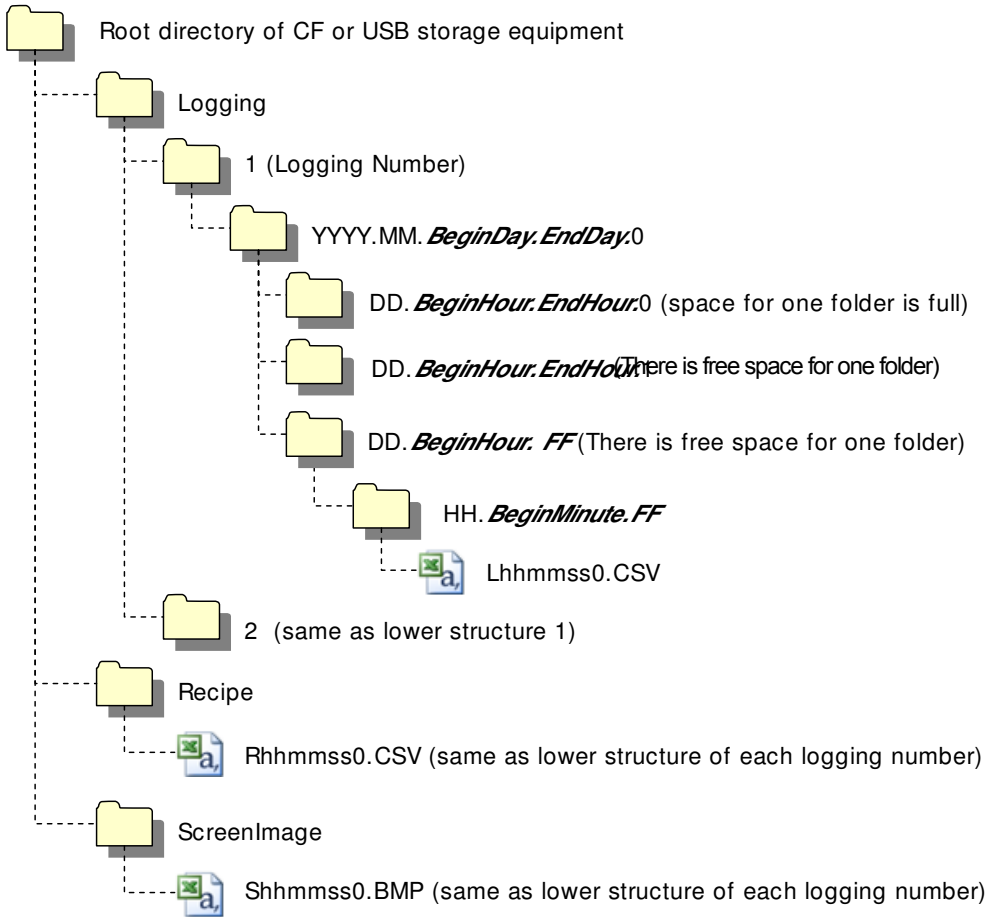
(1) XGT Panel can back up the logging, recipe, and screen image data at CF card or USB storage equipment according to setting in XP-Builder.

(2) In case there is no space for backup in the designated storage equipment, it continues backup deleting previous data or stops backup according to setting in XP-Builder

(3) Monitors attachment status of backup equipment at XP-Builder.

9.1 Path Structure in case of File Backup

Backup path structure of logging, recipe, and screen image is as follows.



1. Path structure in case of logging backup

(1) Directory named 'Logging' is created under the root directory of USB/CF storage equipment

(2) The directory whose name is logging number is created under Logging directory.

(3) The directory whose name is year, month is created under Logging number directory.

(a) Includes day directory under

(b) Up to 500 day directories can be created.

(c) Name of year, month directory includes the firstly created day information under its directory

Ex) In case directory is created in 2010, October and includes directory since 15th under, directory's name is
: 2010.10.15.FF
FF at end means the directory can save more data created in 2010, October (currently, the number of lower directory is 500 or less)

(d) In case month is changed, changes directory name to day information of last created day directory.
Ex) In case month becomes November from October and directory from 15th directory to 30th have been created in 2010, October directory.
: 2010.10.15.30.0

(e) Though month is not changed, in case the number of day directory under year, month directory is 500 or above, directory name is changed into name including day information of last created day directory.
Ex) In case the number of directory from first to 15th is 500 or above in the directory created in 2010, October.
: 2010.10.01.15.0

(f) In case there is the year, month directory having same start day and end day when changing directory's name due to over 500 day directories or change of month, last digit index number increases.
Ex) In case there are three year, month directories that are having over 500 day directories created in October first and 2010 year October directory
: 2010.10.01.01.0
: 2010.10.01.01.1
: 2010.10.01.01.2

(4) Day directory is created under year, month directory
(a) Hour directory is created under day directory
(b) Day directory can have up to 500 hour directory
(c) Name of day directory includes not day information but also hour information of first created hour directory
(d) Relation between day directory and hour directory is same as relation between year month directory and day directory.

(5) Directory whose name includes hour information is created under day directory.
(a) Hour directory includes backup file under
(b) Hour directory can include up to 500 backup file
(c) Name of time directory include not only hour information but also minute information of first created file under
(d) Relation between hour directory and backup file is same as relation between year, month directory and day directory.

(6) Name of logging backup file includes the created hour, minute, second information.
(a) Backup file is created in CSV format.
(b) File name start with 'L' meaning logging and includes hour, minute, second, index information
(c) In case backup file is created at the same time in terms of second, index information at the end of file name increases.

2. Path structure in case of recipe backup
(1) Directory named 'Recipe' is created under USB/CF storage equipment root directory.
(2) Year, month directory is created under Recipe directory
(3) The lower directory structure is same as that of logging backup path structure.
(4) Name of recipe backup file includes the created hour, minute, second information.
(a) Backup file is created in CSV format.
(b) File name start with 'R' indicating recipe and includes hour, minute, second, index information.
(c) In case backup file is created at the same time in terms of second, index information at the end of file name increases.

3. Path structure in case of screen backup
(1) Directory named 'Screen Image' is created under USB/CF storage equipment root directory.
(2) Directory whose name is year; month is created under Screen Image directory.

(3) The lower directory structure is same as that of logging.
(4) Name of screen image backup file includes hour, minute, second information.
(a) Backup file is created in bitmap format.
(b) File name starts with 'S' and includes hour, minute, second, index information.
(c) In case backup file is created at the same time in terms of second, index information at the end of file name increases.

Remark

(1) When changing device time, in case of changing current time into after time, we guarantee the normal operation. But in case of changing current time into early time, we don't guarantee the normal operation. In this case, you have to delete directory including the changed hour and its lower directory for normal operation. For example, if you change time from December 10th to December 5th, you have to delete year, month directory created in December 10th and restart the device
(2) Sorting by project is not supported for each logging, recipe, screen image. For example, there are no.1, 2, and 3 logging groups in the project A. And in case each logging group backups the file, 1, 2, 3 directories are created and each data is saved under each directory. Then, in case file backup occurs in the project B having no.1, 2 logging group, backup file is created in same directory of project A. In this case, you have to sort the backup files of project A and B based on the created time.

9.2 Operation setting when there is no Space for Backup

You can designate in the XP-Builder whether to cancel the backup or delete the oldest backup file and execute backup when there is no space in the storage equipment.
[Project Property Setting -> Storage Settings -> Backup Storage -> Delete old file if disk full]

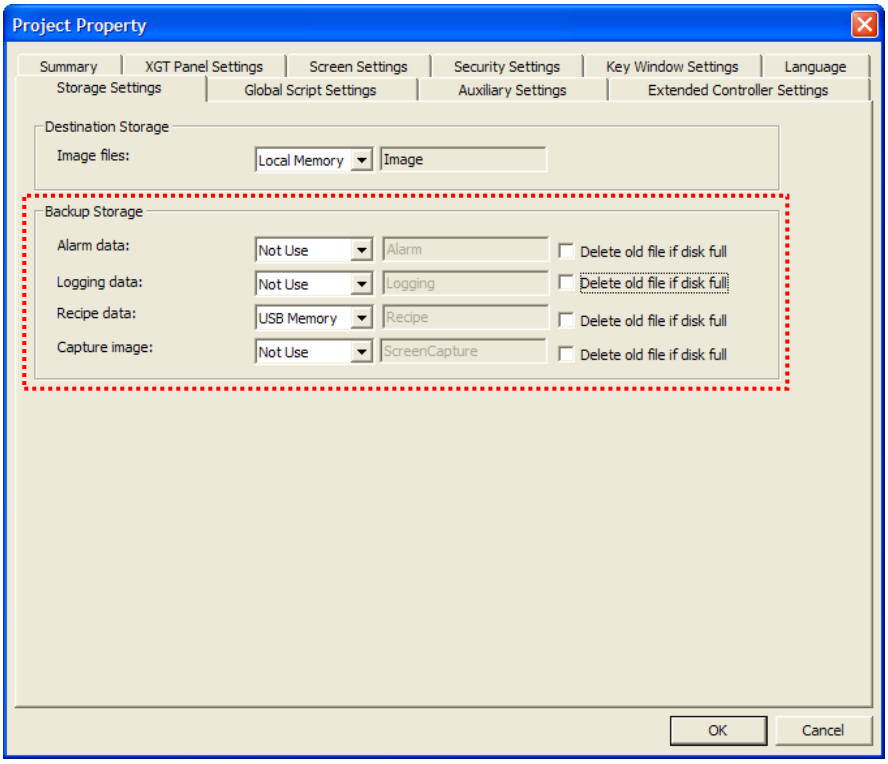
1. In case of backup, deleting the oldest data
(1) In case there is no space for backup, searches the oldest year, month directory under Logging, Recipe, Screen Image. (But in case of Logging, finds under Logging number directory. That is, when executing backup about Logging number 2, in case there is no backup data in Logging number 2 directory and there is data only in logging number 1, data of logging number 1 is not searched/deleted.)
(2) Searches the oldest day directory under the oldest year, month directory.
(3) Searches the oldest hour directory under the oldest day directory.
(4) Deletes the oldest backup file under the oldest hour directory
(5) Checks the space and if more space is necessary, the above steps of (1) ~ (4) are repeated and checks the space.
(6) When deleting file, in case all data in time directory are deleted, relevant hour directory is deleted.
(7) When deleting hour directory, in case all hour directories in day directory are deleted, relevant hour directory is deleted.
(8) When deleting day directory, in case all day directories in year, month directory are deleted, relevant year, month directory is deleted.

Remark

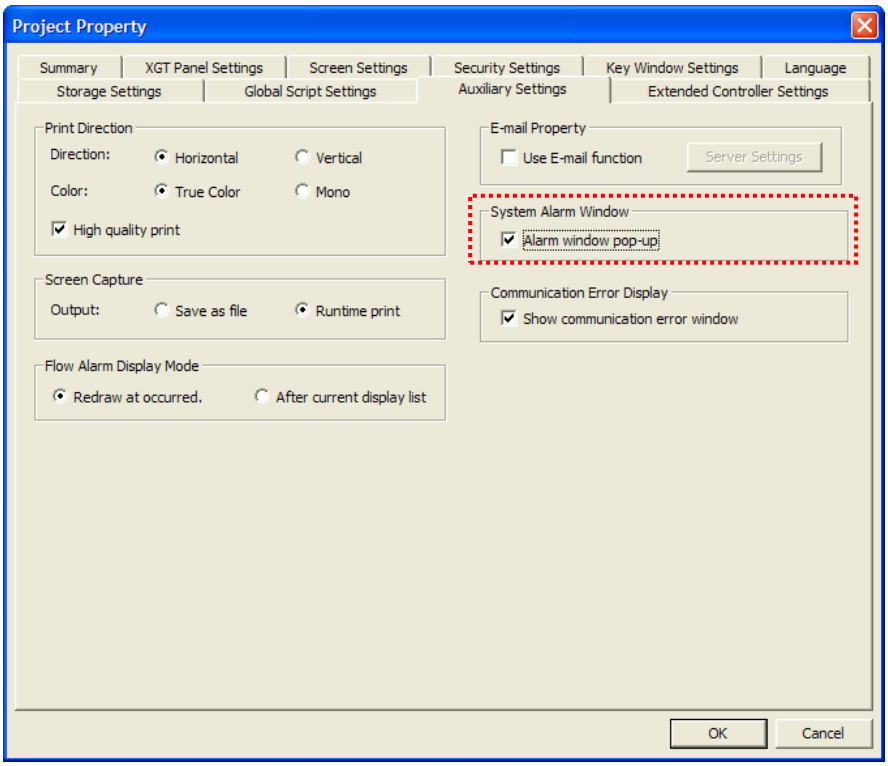
(1) In unknown directory or file (user file or directory), searches the oldest thing among normal backup files except unknown directory or file.
(2) In case there is nothing except user data in now searched directory, backup operation fails. XGT Panel can't delete user data, at this point, operation stops.

9.3 Monitoring Connection Status of External Storage Equipment

XGT Panels monitors connection status about external storage equipment designated when setting backup path in XP-Builder. The following figure is backup path specified in XP-Builder.



In order to use this monitoring function, you have to set about system alarm window



In case USB storage equipment (or CF storage equipment) is removed during operation after setting the path for saving Logging backup file as USB storage equipment (or CF storage equipment) and downloading the project into device, the designated system alarm (HS951.0) is set. In case storage equipment is equipped again, alarm is reset.

In case USB storage equipment (or CF storage equipment) is removed during operation after setting the path for saving Recipe backup file as USB storage equipment (or CF storage equipment) and downloading the project into device, the designated system alarm (HS951.1) is set. In case storage equipment is equipped again, alarm is reset.

In case USB storage equipment (or CF storage equipment) is removed during operation after setting the path for saving Screen Image backup file as USB storage equipment (or CF storage equipment) and downloading the project into device, the designated system alarm (HS951.2) is set. In case storage equipment is equipped again, alarm is reset.

Internal address of the designated system alarm can be checked in XP-Builder as follows.

	Device	Data Type	Description
1	HS950.0	BIT	NVRAM Low Battery Warning
2	HS950.1	BIT	NVRAM Invalid Data Warning
3	HS951.0	BIT	No Logging Backup Storage
4	HS951.1	BIT	No Recipe Backup Storage
5	HS951.2	BIT	No Screen Backup Storage
6	HS951.4	BIT	No Printer
7	HS950.8	BIT	USB Over Current Warning
8	HS951.3	BIT	No Alarm Backup Storage

Chapter 10 Installation and Wiring

10.1 Installation

10.1.1 Installation environment

This machine has high reliability regardless environment. But for reliability and stability, be careful the followings

(1) Environment condition

(a) Install at the panel which can protect this machine from water and dust.
XGT Panel is designed by IP65 Standard in front parts and IP20 Standard in rear parts.
(b) Install at the place where impact and vibration is not continuously applied.
XGT Panel is designed to meet IEC standard (IEC 61131-2).
(c) Do not expose this machine to direct light.
(d) Do not install at the place where rapid temperature change can occur.
Moisture by rapid temperature change can cause malfunction and damage.
(e) This machine should be installed within 0 ~ 50°C, otherwise the screen may be changed or cause malfunction
(f) This machine should be installed within 10~85% relative-humidity.
Moisture by rapid temperature change can cause malfunction and damage.
(g) Avoid corrosive gas and burnable gas.

(2) Installation construction

(a) When doing screw's processing or wiring construction, be careful that the remains do not enter the XGT Panel inside.
(b) Install at the place where you can easily control.
(c) Do not install with high voltage machine within same Panel.
(d) Keep distance of more than 100mm from duct for wiring and peripheral machine.
(e) Ground at the place where few noises develop.

(3) Anti-heat design of control panel

(a) In case of installing XGT Panel in the airtight panel, consider the heat by other machine as well as own heat. In case that the air circulates through a ventilating opening or a general pan, XGT Panel system can be influenced by in-draft of dust or gas.
(b) We recommend you to install a filter or to use an airtight heat exchanger.

Remark

Anti-water and anti-vibration standard
► IP standard is IEC 529 standard (international anti-water grade regulation) and it can be divided into protection grade against invasion of solid matter and protection grade against invasion of water.
► In the IP65 certification, it can be divided into protection against dust (6) and water jets from all sides (5).
►IP20 is about protection against solid matter (2) whose diameter is more than 12mm and IP2 doesn't have protection about water (0)

10.1.2 Notice in handling

It describes the notice from opening to installation.
- Do not drop or cause heavy impact.
- Do not disassemble voluntarily. When doing this, we are not responsible for the product.
- When wiring, be careful that the remains do not enter into XGT Panel.

10.1.3 Notice in installing the panel

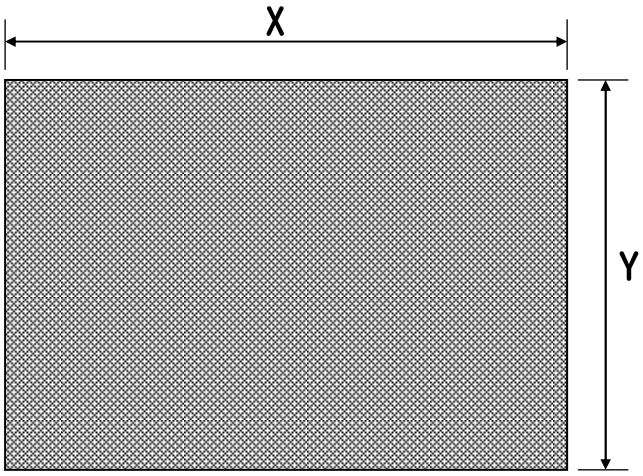
Here describes how to install XGT Panel in panel and notice.

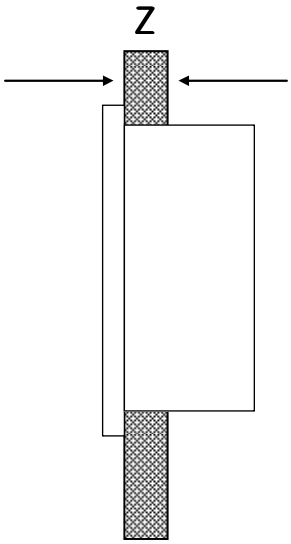
(1) Panel cut

• Before installing the XGT Panel in panel, panel should be made with the following dimension.

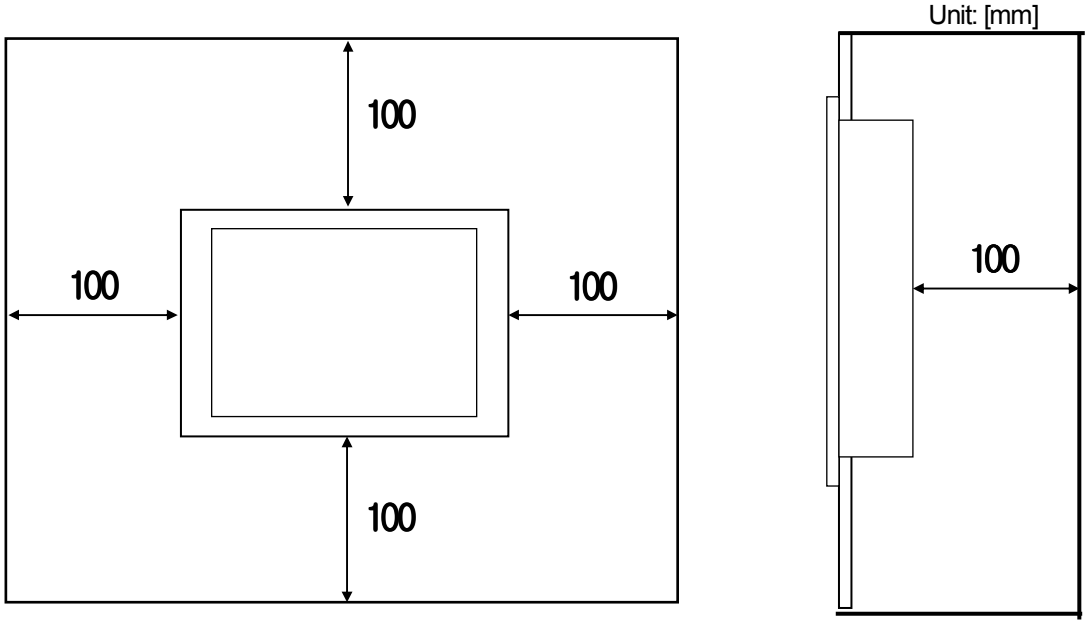
Unit: [mm]

Classification	X (Wide)		Y (Height)		Z (Thickness)
XP30-BTE XP30-TTE XP30-BTA XP30-TTA	156.0	+1	123.5	+1	1.6~9.5
		−0		−0	
XP40-TTA XP40-TTE	192	+1	138	+1	
		−0		−0	
XP50-TTA XP50-TTE	228.5	+1	158.5	+1	
		−0		−0	
XP70-TTA	294.5	+1	227.5	+1	
		−0		−0	
XP80-TTA	294.5	+1	227.5	+1	
		-0		-0	
XP90-TTA	383.5	+1	282.5	+1	
		−0		−0	





(2) XGT Panel installation

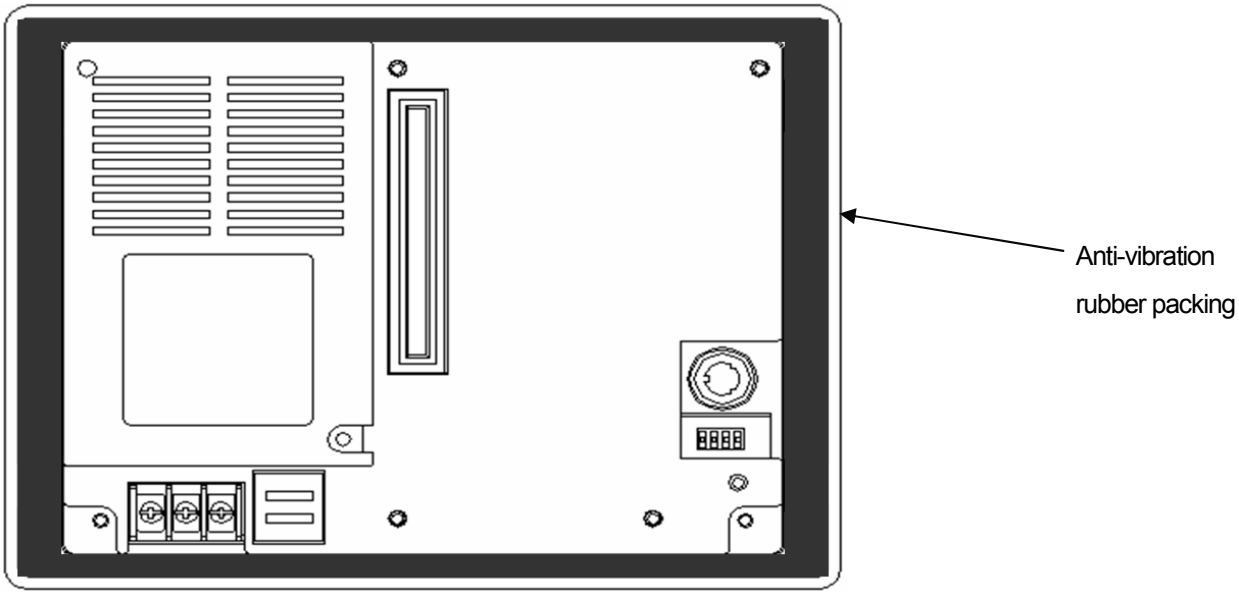


• Keep the distance of 100 mm between XGT Panel and panel per each direction.

Remark

(1) To be affected at a minimum by the electromagnetic waves (radial noise) or heat from other controllers, it needs to keep its distance as the above explanation.
(2) When installing, consider the power and communication cable wiring.

• When fixing the product to panel, use the anti-vibration rubber packing.
The anti-vibration rubber packing is equipped at the XGT Panel basically.



Remark

Because the product can be affected by dust, use the anti-vibration rubber packing.

(3) Installation location

- When installing the XGT Panel, consider screen and use of touch.
- When you don't see within the following angle, you may not see clearly. When installing, consider angle.

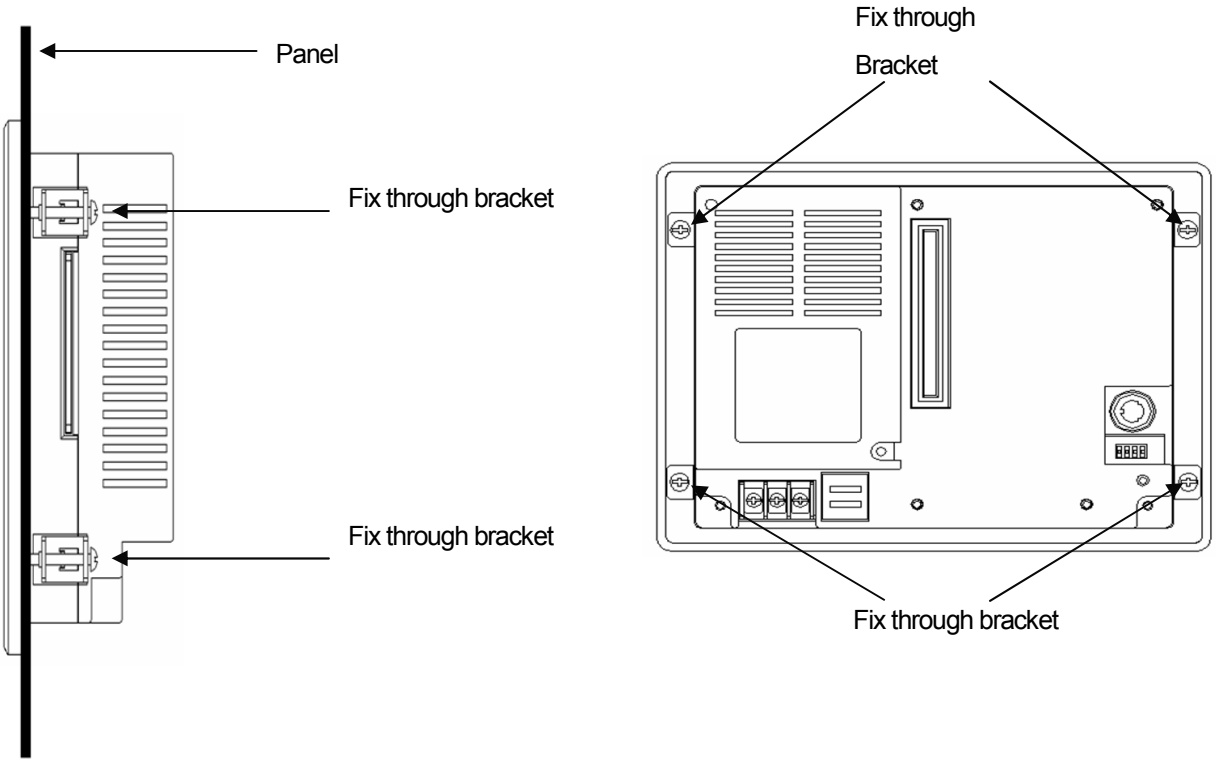
Item	Angle (left and right)	Upper	Lower
XP30-BTE	45 deg.	40 deg.	20 deg.
XP30-TTE	80 deg.	70 deg.	70 deg.
XP30-BTA	45 deg.	40 deg.	20 deg.
XP30-TTA	80 deg.	70 deg.	70 deg.
XP40-TTA(TTE)	65 deg.	50 deg.	60 deg.
XP50-TTE	45 deg.	20 deg.	20 deg.
XP50-TTA	65 deg.	50 deg.	60 deg.
XP70-TTA	65 deg.	45 deg.	65 deg.
XP80-TTA	65 deg.	45 deg.	75 deg.
XP90-TTA	75 deg.	50 deg.	60 deg.

Remark

1) Because XP30-BTA (BTE) uses STN Mono LCD, it has poorer clearness and expression angle.
2) XP30-BTA (BTE) can adjust Contrast. Adjust Contrast according to environment.

(4) Fixation

• Fix the XGT by using the bracket as follows. (The bracket is included in the product.)



Remark

Please remove a protective film attached to the screen when launching a product. Modification of the protective film can cause the touch malfunction or error in input. It is recommended to use a protection sheet to protect the screen. Please inquire for purchasing a protection sheet to the near dealerships or special agent.

(1) Protection Sheet for XP30: XPO-PS30
(2) Protection Sheet for XP40: XPO-PS40
(3) Protection Sheet for XP50: XPO-PS50
(4) Protection Sheet for XP70/80: XPO-PS70
(5) Protection Sheet for XP90: XPO-PS90

10.2 Wiring

It describes the wiring that you should know when installing the XGT Panel.

10.2.1 Power wiring

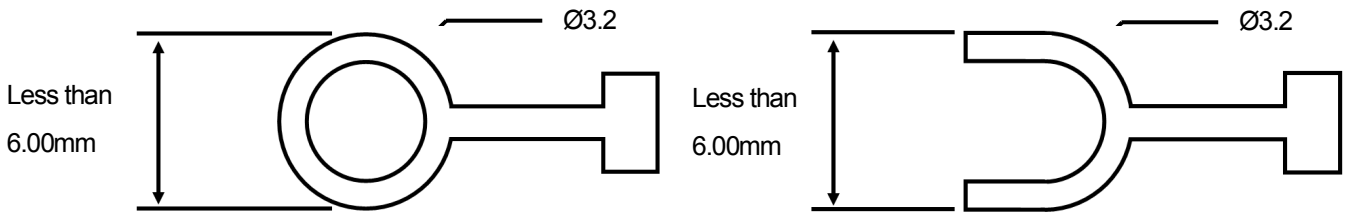
XGT Panel is divided into the DC product and the AC product.

Power	Name
DC 24V	XP30-BTA(BTE)/DC XP30-TTA(TTE)/DC XP40-TTA(TTE)/DC XP50-TTA(TTE)/DC XP70-TTA/DC XP80-TTA/DC
DC 12~24V	XP30-BTA/D1 XP50-TTA/D1
AC 100~240V	XP70-TTA/AC XP80-TTA/AC XP90-TTA/AC

Warning

- If AC power is applied into the product for DC power, It may cause damage or fire.
  Be careful of connection.
- '/DC' is the product which use DC 24V, '/D1' is the product which use DC 12~24V, and '/AC' is the product which use AC 100~240V. When using the product, Please check the label in the back of the product.

The power terminal should have the following specification.



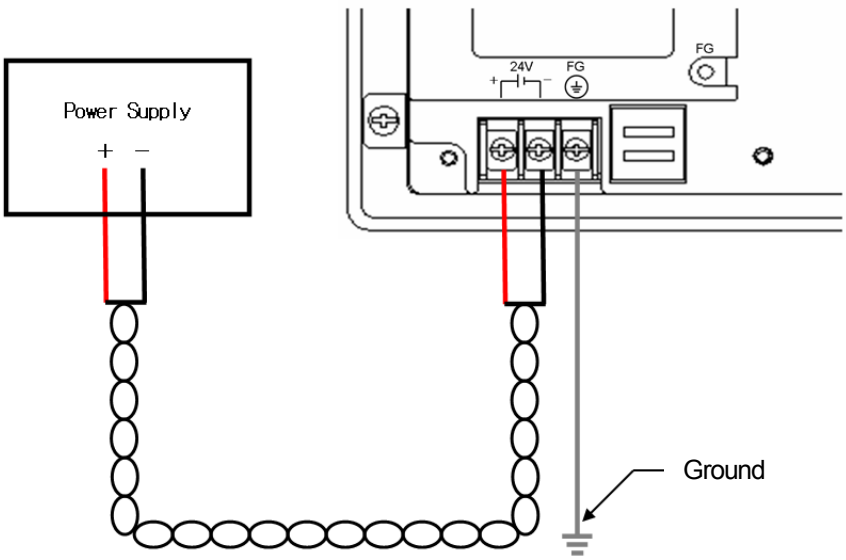
The power cable should have the following specification.

Type	Cable specification (Unit: ㎟)
Power and protection ground	1.5 (AWG16) ~ 2.5 (AWG12)

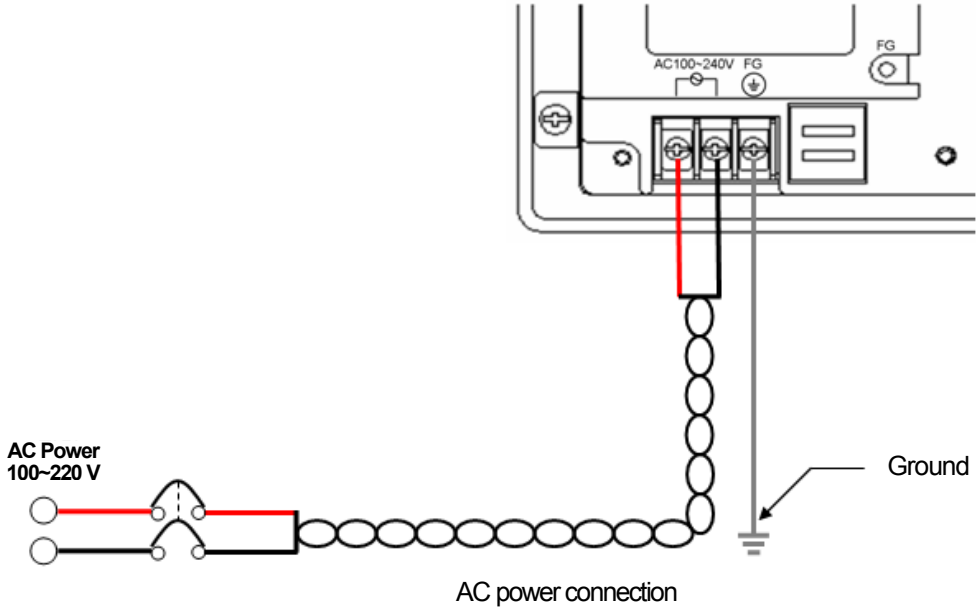
Remark

(1) Because of voltage down, we recommend the thick stranded cable (more than 2 ㎟).
(2) If possible, use the stranded cable and connect with minimum length.
(3) To easily classify the cable, use the different color's cable respectively.

Wiring of power is as follows.



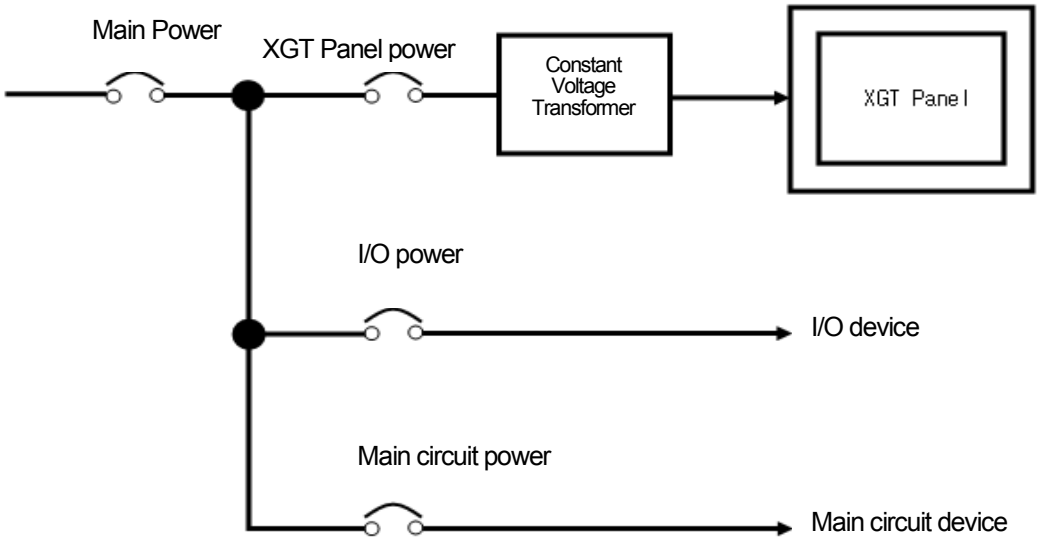
DC Power connection



Remark

(1) When the regulation of power is bigger than provision, use the constant voltage transformer.
(2) In case power has much noise, use the insulation transformer.

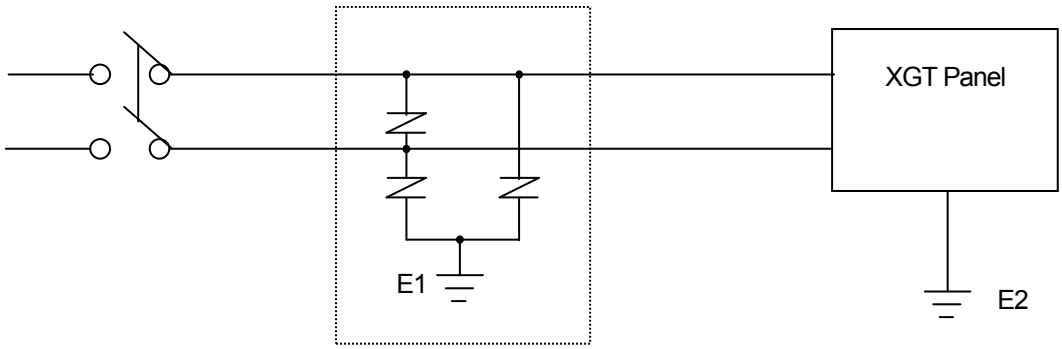
Separate the XGT Panel power from the I/O device and main circuit device.



Remark

(1) Separate the XGT Panel's power from the main circuit (high voltage, large current) cable, I/O signal cable.
If possible, install with a interval of more than 100mm.

Against the surge and lighting, use the surge absorber as follows.



Surge absorber to prevent the lighting

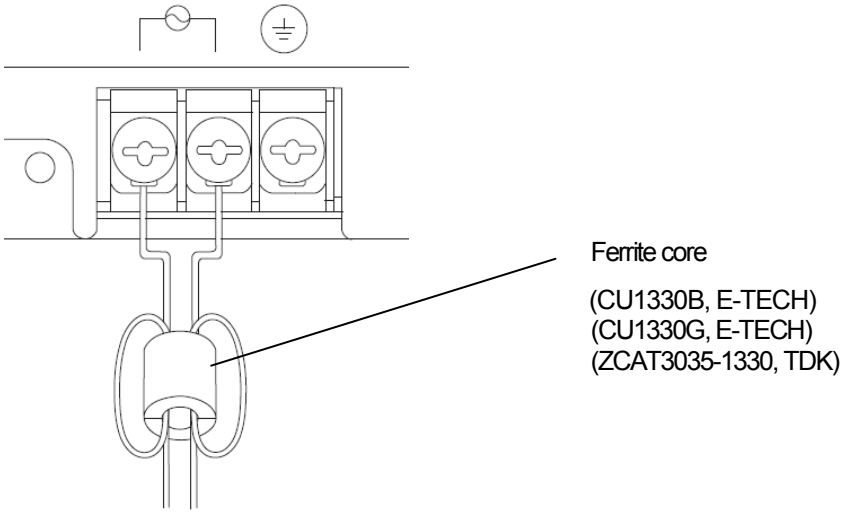
Remark

(1) Separate the surge absorber's ground (E1) from XGT Panel's ground (E2).
(2) Select a surge absorber so as not to exceed the maximum permissible voltage of a surge absorber even if power voltage rises to maximum

When noise invades, use the insulation shield Trans or noise filter.
Strand input power cable with minimum length and make sure the shield Trans or noise filter is not crossed above the duct.

It is recommended to attach a ferrite core in power section when using Magnet Switches.

ex) Attach ferrite core on power section as shown in the illustration.

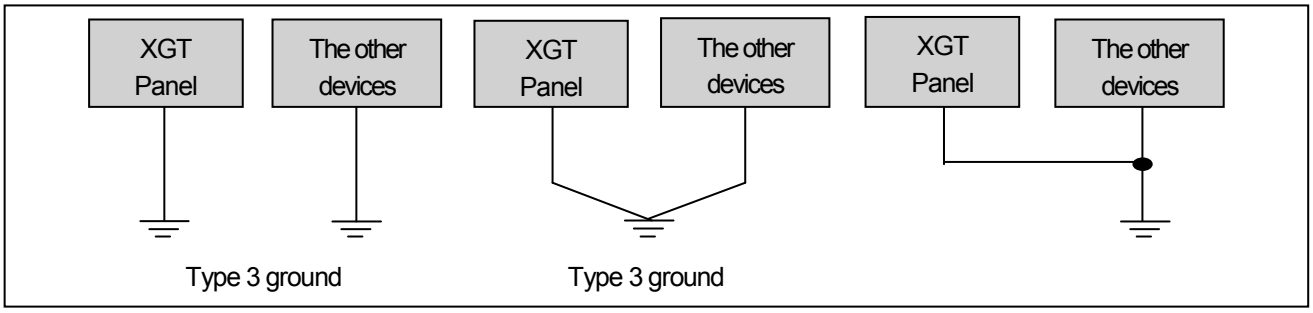


10.2.2 Ground wiring

(1) Our XGT Panel has enough anti-noise measure, so except that there are many noises specially, the ground is not needed. When doing ground, please refer to the followings.

(2) The ground should be the exclusive ground.
The ground should be type 3 ground (ground resistor is less than 100Ω).

(3) When not doing the exclusive ground, do common ground like figure B).



A) Exclusive ground: Best B) Common ground: Good C) Common ground: Poor

(4) Use the cable more than 2 mm^2. Put the point of the ground near the XGT Panel and shorten the ground line.

Remark
(1) If the ground status is poor or connected like C), it may cause malfunction or fault of communication.
Make sure that the ground status is good.

Chapter 11 Maintenance

To keep the XGT Panel best, examine the XGT Panel.

11.1 Maintenance

Because an error may be developed by environment, the periodic maintenance is needed. You should check the following categories once or twice every 6 months.

Maintenance category		Judgment standard	Measure
Power		Within the power change range (Within –15% / +10%)	Modify the source of electric power in order to be in the fluctuation range of a permissible voltage.
Environment	Operating temperature	0 ~ + 50℃	Modify the operating temperature and humidity to be proper.
	Operating humidity	10 ~ 85%RH	
	Vibration	No vibration	Use the anti-vibration rubber and make a count measure.
Getting loose of power terminal		There is no unwinding	Screw the unwound terminal.
Getting loose of communication connector		There is no unwinding	Screw the unwound terminal.
Reserved part		Amount of reserved part and reservation Check the status	Refill the insufficiency and improve the reservation.

11.2 Daily Maintenance

Check the followings daily.

Maintenance category	Maintenance contents	Judgment standard	Measure
Status of panel adhesion	Check the unwound screw of the bracket	Fixed firmly	Wind the screw
Getting loose of power terminal	Getting loose of power terminal screw	There is no unwinding	Wind the screw
	Reduce the distance between compressed terminals.	Keep the proper distance.	Correction
Status of communication connector	Unwinding of fixed screw	There is no unwinding	Wind the screw
Indication LED	Check the lighting	Green LED should be turned on	Refer to the appendix 1.

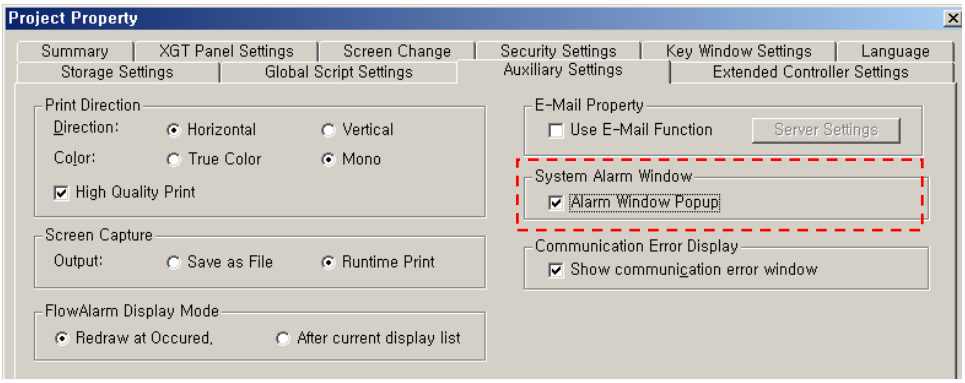
11.3 Periodical Maintenance

Check the followings once or twice every six months and take measure.

Maintenance category		Maintenance method	Judgment standard	Measure
Environment	Surrounding temperature	Measure through temperature/Hygrometer Measure of corrosive gas	0 ~ 50 °C	Modify it to meet the general standard. (environment standard in the panel)
	Surrounding humidity		10 ~ 85%RH	
	Surrounding pollution degree		There is no corrosive gas.	
XGT Panel Status	Unwinding, swing	Shake the XGT Panel	Fixed firmly	Wind the screw
	Dust, foreign matter adhesion	Check by eye	There is no adhesion	-
Connection status	Unwinding of screw	Wind the screw by driver	There is no unwinding.	Wind the screw
	Reduce the distance between compressed terminals.	Check by eye	Keep the proper distance.	Correction
	Unwinding of connector	Check by eye	There is no unwinding.	Wind the fixed screw of connector
Power voltage maintenance		Check the power voltage of input terminal of power by test	AC100~240V: AC85~ 264V DC24V: DC19.2 ~ 28.8V	Supply power modification
Battery		Check when battery is exchanged and voltage drop is indicated (It is expressed by system alarm)	• Check the total of power stoppage time and guarantee duration • There is no battery voltage drop indication	If guarantee duration is exceeded even tough there is no battery voltage drop indication, change the battery.
LCD Backlight maintenance		Checking by eye	Check the guarantee duration	When error occurs, change the backlight.
Touch status	Touch location error	Check at the Diagnostics of XGT Panel	Appropriate touch location	Reset at the setting of XGT Panel.
	Touch pad malfunction	Checking by eye	There is no damage or scratch/pollution	When error occurs, change touch pad.

Remark

(1) Battery exchange time is expressed by alarm. System alarm is expressed when system alarm category is set at the XP-Builder as follows.



(2) LCD backlight's exchange is available for only XP50-TTA, XP70-TTA, XP80-TTA, XP90-TTA. In case of XP30-BTE, XP30-BTA, XP30-TTA, you have to exchange the LCD when error occurs or product life is finished because LCD and backlight is one product.

Chapter 12 EMC Standard Certification

12.1 Requirement for EMC Standard Certification

EMC command is regulated on “It doesn’t produce the Strong electromagnetic waves: Emission” and “It is not affected by electromagnetic wave from external: Immunity”. The following is describing the contents to meet the EMC command when configuring the system by using the XGT Panel. This is a summary document for the request and standard which our company has obtained from EMC but we don't assure that all devices manufactured according to these contents are not suitable for the below standards. The final manufacturer needs to finally judge about the fitness method or fitness judgment of EMC command.

12.1.1 CE standard certification

Applied Standards		Results
1. Emission		
Conducted Disturbance	EN61000-6-4:2007	C
Radiated Disturbance	EN61000-6-4:2007	C
Harmonic Current Emission	EN61000-3-2:2006 / A2 : 2009	NA 주2) NT 주3)
Voltage Change, Fluctuations and Flicker	EN61000-3-3:2008	NA 주2) NT 주3)
2. Immunity		
Electrostatic Discharge	EN61000-6-2:2005 EN61000-4-2:2009	C
Radio-Frequency Electromagnetic Field	EN61000-6-2:2005 EN61000-4-3:2006 / A1 : 2008	C
Fast Transient	EN61000-6-2:2005 EN61000-4-4:2004	C
Radio-Frequency Continuous Conducted	EN61000-6-2:2005 EN61000-4-6:2009	C
Power-Frequency Magnetic Fields	EN61000-6-2:2005 EN61000-4-8:1993 / A1 : 2001	C
Surges	EN61000-6-2:2005 EN61000-4-5:2006	C
Voltage Dips and Interruptions	EN61000-6-2:2005 EN61000-4-11:2004	NA 주2) C 주3)
RE1) C=Conform NC=Not Conform NT=Not Tested NA=Not Applicable RE2) Applicable to the only XP30-BTA(BTE)/DC, XP30-TTA(TTE)/DC, XP50-TTA(TTE)/DC, XP70-TTA/DC, XP80-TTA/DC XP40-TTA(TTE) RE3) Applicable to the only XP70-TTA/AC, XP80-TTA/AC, XP90-TTA/AC		

Directive:

Electromagnetic Compatibility Directive 89/336/EEC amended by the Directive 93/68/EEC

12.1.2 KC standard certification

The XGT Panel acquire the electromagnetic fitness registration (KC specification) certified by wave laboratory under information-communication part.

A grade device

This device acquires KC for business. Be careful that.
If device is not purchased properly, exchange it to device for home.

12.2 Requirement for Low Voltage Command Suitability

It is required to get the needed Stability for the device operated at AC50~1000V, DC75~1500V's power. The following describes attention about installation and wiring for the suitability when using the XGT Panel. Though the following data is made by requirement of regulation and standard, we don't guarantee that all devices are suitable for the above command. The method to be suitable for the EMC command and judgment of suitability should be finally made by device manufacturer himself.

12.2.1 Standard certification for XGT Panel

XGT Panel is according to the EN6100-1 (stability of device used in the measure, control laboratory).
XP70-TTA/AC, XP80-TTA/AC, XP90-TTA/AC among the XGT Panel is made to meet the above standard.

12.2.2 Selection of XGT Panel

(1) XP70-TTA/AC, XP80-TTA/AC, XP90-TTA/AC
Because the Power module whose rated input voltage is AC110/220V has danger voltage (voltage of more than 42.4V), the product which is suitable for CE mark is having the improved insulation between internal 1 and 2.

(2) XP30-BTA(BTE)/DC, XP30-BTA/D1, XP30-TTA (TTE)/DC, XP50-TTA (TTE)/DC, XP50-TTA/D1, XP40-TTA(TTE)/DC, XP70-TTA/DC, XP80-TTA/DC
The I/O module under DC24V exceeds the range of low voltage command target.

Appendix 1 Troubleshooting

1. Type of Problem

It classifies problems from XGT Panel including an indicated figure, indication of the object, and problems appeared when downloading. Refer to the following chart.

Classification of problem	Description
Problem when starting	Malfunction when starting. ☞**Please refer to the 2. Problem when starting.**
Problem when touching	In case that there is no reaction when touching. ☞ **Please refer to the 3. Reaction problem when touching.**
Display problem of figure and object.	In case that the figure or object is different from when editing. ☞ **Please refer to the 4. Indication problem of figure and object.**
Communication problem	In case that communication is not executed properly. ☞ **Please refer to the 5. Communication problem.**
Error message when executing program	In case that an error message occurs when operating the XGT Panel. ☞ **Please refer to the 6. Error message when executing program.**

2. Problem when Starting

Why does black screen show up when turning on the device?

Phenomenon: When turning on the device, black screen shows up and the booting is impossible.

<Reason>

1) Because the device is not set as a booting mode.
2) Black screen may appear because of malfunction of backlight.

<Solution>

1) Because the device is not set as a booting mode, the above problem can occur. Check whether the number 2 switch at DIP switch in the back of the device is in A direction or not.

When is LED color changed?

Check the followings.

Display color	Contents
RED	Communication time-out or system alarm which is registered as a system alarm at the builder occurs in the HMI. (It is not recovered)
GREEN	OS booting status, HMI's monitoring status, HMI's not monitoring status. (including image data, diagnosis, setting , and engine update)

3. Reaction Problem when Touching

When touching the screen it reacts in a different area or it may not react at all?

Phenomenon: When touching the screen it reacts in a different area or it may not react at all.

<Reason>

1) Touch's Calibration setting is not proper.
2) Touch panel may be a break down.

<Solution>

1) Redo Calibration setting about touch. Refer to the [Device manual Ch.4.1 Touch Calibration].
2) It you can't go to setting menu, connect mouse to USB port and use mouse.

Buzzer does not sound.

Phenomenon: When pressing buzzer, buzzer does not sound.

<Reason>

1) When that the switch operates but the buzzer doesn't sound, the buzzer is set as no sound.
2) If the switch doesn't work too, it seems that some error occurs in the touch function.

<Solution>

1) Redo environment setting for buzzer to sound. Refer to the [device manual Ch.4.7 Environment Setting].
2) After setting to use buzzer, check whether the buzzer sounds or not in the 1)'s setting windows.

4. Display Problem of Figure and Object

The shape of object is not shown or the number or character value which has to be shown is not shown.

Phenomenon: The shape of object is not shown or the number or character value which has to be shown is not shown.

<Reason>

The connection with PLC connected with each project is disconnected or NAK occurs.

<Solution>

1) When the communication is executed at first, Check the cable connected with PLC is OK or not.
2) If object where the offset is set is not shown, check whether address range is exceeded or not.
3) In case that communication is not OK, when communication is abnormal, the following message shows up in the XGT Panel.

Object type	Phenomenon
Bit Switch	The switch is expressed but it doesn't work.
Word Switch	The switch is expressed but it doesn't work.
Change Screen Switch	The switch is expressed but it doesn't work.
Special Switch	The switch is expressed but it doesn't work.
Multi Switch	The switch is expressed but it doesn't work.
Bit Lamp	Image is not shown.
Word Lamp	Image is not shown.
N-State Lamp	Image is not shown.
Clock	Present time is shown.
Bit Message	Message is not shown. When designating the background image, image is shown as it is.
Word Message	Message is not shown. When designating the background image, image is shown as it is.
Numeric Display	The value is not shown. When designating the background image, image is shown as it is.
Numeric input	The value is not shown. When designating the background image, image is shown as it is.
Text Display	Character string is not shown. When designating the background image, image is shown as it is.
Text Input	Character string is not shown. When designating the background image, image is shown as it is.
Bit Window	The window screen set in the object is not shown. But if communication is set with other object in the same window screen, it can be shown by that object.
Word Window	The window screen set in the object is not shown. But if communication is set with other object in the same window screen, it can be shown by that object.
Bit Part	The part screen set in the object is not shown. But if communication is set with other object in the same part screen, it can be shown by that object.
Word Part	The part screen set in the object is not shown. But if communication is set with other object in the same part screen, it can be shown by that object.
Animation	Animation is not shown.
Bar Graph	Graph is not shown. When designating the background image, image is shown as it is.
Pie Graph	Graph is not shown. When designating the background image, image is shown as it is.
Meter Graph	Graph is not shown. When designating the background image, image is shown as it is.
Closed Graph	Graph is not shown. When designating the background image, image is shown as it is.
Trend Graph	X, Y axis is shown normally but trend axis is not normally shown. When designating the background image, image is shown as it is.

Object type	Phenomenon
History Alarm Viewer	Change doesn't occur. When communication is abnormal, alarm occurs because it can't know the status of alarm target device. But previous alarm data shows up as it is.
Data list	Value is not shown. Lattice of viewing data list of object is shown as it is.
Logging Viewer	Change doesn't occur. When communication is normal, the recorded log data is shown normally. But, log data is shown as # when communication is abnormal.
Navigator	Change doesn't occur. Because it shows the group of alarm already developed, though communication is abnormal, if it has alarm data already developed, it shows the name of group where each alarm is included.

The number indication object value is shown as # or ~.

Phenomenon: The number indication object value is shown as # or ~.
(Same phenomenon occurs at the number input device, viewing data list, and viewing logging)

<Reason>

1) This happens when digit is not correct or type is not BCD.

<Solution>

1) When the number to be expressed exceeds the number set in the object, # is expressed. In case of this, set the digit largely and after download again, execute program again.
2) When the numeric display object is expressed as BCD type, the data whose type is not BCD is expressed as ~. In case of this, adjust device value as BCD type.
3) This phenomenon occurs at the data list object, numeric input, numeric display device, and logging viewer.

After switching the screen, the previous screen remains for a few minute.

Phenomenon: After switching the screen, when there is no background or image in the part or number indication device, the previous screen remains for a few minute because of change of part.

<Reason>

After switching the screen, when connection is set up multiply or communication time-out occurs, the screen of previous part remains in some object.

<Solution>

1) It's normal status. In case that multiple connection or communication is not good, when switching the screen, the remains of previous screen can occur during the time-out hour.

The folded object doesn't sequentially show up.

Phenomenon: The number under the data list shows up above data list.

<Reason>

1) The device value is expressed at the top of object screen.

<Solution>

1) It's normal status. The folded window or part object is not included in screen, regardless of sequence of drawing, the object changed recently is expressed at top of screen. So if possible, do not fold the object in screen.

The object always shows up above the figure.

Phenomenon: I downloaded the figure above the object in XP-Builder, but the object always shows up above the figure.

<Reason>

1) In XGT Panel, The object always shows up above the figure.

<Solution>

1) It's normal status. The object always shows up above figure in the XGT Panel.

5. Communication Problem

It seems that communication does not work.

Phenomenon: On the screen where the object is not many, communication works but when you move the screen where the object is many, timeout occurs.

<Reason>

1) In the device setting, the communication time-out is set to be too short.

<Solution>

1) It occurs because timeout is set much smaller than sum of request time of communication data and response time from PLC. In the device setting at the XP-Builder, after setting communication time out to be big, download program and execute again.

It seems that communication doesn't work.

Phenomenon: Communication doesn't work.

<Reason>

1) Communication setting or cable may be not normal.

<Solution>

1) In case of RS-232C, check whether connection setting is normal or not in XP-Builder.
2) In case of RS-422/485, check whether station and communication connection setting is normal or not.
3) If 1), 2) is normal, do diagnosis about PLC-RS232C, PLC-RS485/422 at the Serial diagnosis screen of device menu.
   Refer to the [Device manual ch.5.6 Serial Communication Diagnosis]
4) If 3) is normal, check whether connection cable has error or not.
5) In case of Ethernet, check the port and IP setting about relative PLC.

6. CF/USB Removal of Memory Card

When removing the CF/USB memory card, device is stopped for some times.

Phenomenon: This happens when doing data backup including logging, recipe.

<Reason>

1) This happens because memory card is removed when doing data backup.

<Solution>

1) If possible, when monitoring XGT Panel, do not remove the memory card and after going out to the waiting screen, execute the removing.
2) Inescapably you have to remove it during the operation, remove when backup does not occur. If the above phenomenon occurs, it works normally after about 10 seconds.

7. Error Message during Execution of Program

In case that problems occur during execution of XGT Panel including the start of device, diagnosis of device and environment setting, project download, monitoring of control device, and error messages occur as type of box. At this time the message indicates the code made by 4 digit number. The front 2 number indicate code of object and work, the rear 2 number is message number. In case that the present error message is indicated as [0101], an error message occurs when doing diagnosis about the status of NVRAM. When an error message occurs, refer to the row's number and sequence and find the category of reason and measure.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
Device diagnosis	0x01	0x01	XGT Panel	NVRAM Data Access ... FAILED!	Failed to check whether backup memory is normal or not. If this symptom is repeated, contact the near Customer Service Center.
		0x02	XGT Panel	BATTERY STATUS ... NOT GOOD!	Backup data is not valid. If this symptom is repeated when turning power off and on, remove XGT Panel's power and exchange the battery.
		0x03	XGT Panel	Write Operation FAILURE!	The built-in Flash disk has an error. Contact the near Customer Service Center.
		0x04	XGT Panel	Read Disk Information Error!	The built-in Flash disk has an error. Contact the near Customer Service Center.
		0x05	XGT Panel	Write Operation FAILURE!	Check that CF card is empty, and equip CF card and test again. If same symptom is repeated, CF card or CF card slot of XGT Panel may have a problem.
		0x06	XGT Panel	Read Disk Information Error!	Check that CF card is empty, and equip CF card and test again. If same symptom is repeated, CF card or CF card slot of XGT Panel may have a problem.
Device setting	0x02	0x01	XGT Panel	Invalid timeout value.	You inputted the wrong time which is not within backlight setting time range. Input the effective time.
		0x02	XGT Panel	Not found XGT Panel configuration file.	There is no setting information data of XGT Panel. If this symptom is repeated when turning power off and on, contact the near Customer Service Center.
		0x03	XGT Panel	Please enter an integer between 0 and 255.	When setting IP, the values within 0~255 are effective. Input the value within the above range.
Viewing device information	0x03	0x01	XGT Panel	No project in XGT Panel.	Now, there is no downloaded project so you can't see connection information. Download the project from XP-Builder.
XGT Panel Update	0x04	0x01	XGT Panel	Failed to Start engine. Please update engine again.	Because of update error or Flash disk error, program can't be executed. If you can update, redo the above procedure. If you can't,

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
					contact the near Customer Service Center.
Switch	h05	h01	XGT Panel	Invalid password.	There is password in the each object. When editing the project downloaded in the present device, input the designated password at the project property information.
Number indication device/ Number input device	0x06	h01	XGT Panel	Can't write Data.	Because of communication error, the value can't be inputted. Check the communication status and input again.
		h02	XGT Panel	No input Data.	You tried to input with no value. Input the value
		0x03	XGT Panel	Exceeded the max length.	You exceed the maximum length to input.
		0x04	XGT Panel	Exceeded the minimum Value.	You exceed the maximum value to input.
		0x05	XGT Panel	Exceeded the maximum Value.	You exceed the minimum value to input.
		0x06	XGT Panel	Invalid at Input Case.	When you input the value, input can't be done because of wrong input. Check the input condition of each object in the Builder and input again.
Lamp	0x07	None			
Character indication device/ Character input device	0x08	None			
Message	0x09	None			
Clock	0x0A	None			
Animation	0x0B	None			
Graph	0x0C	None			
Window	0x0D	None			
Part	0x0E	None			
History alarm	0x0F	None			
Flow alarm	0x20	None			
System alarm	0x21	None			
Scheduler related	0x22	None			
Recipe related	0x23	None			
Logging related	0x24	None			
Data list	0x25	None			
Project download	0x26	0x00	XGT Panel	Abnormal send-payload. Please download project again.	Communication status is abnormal. Check the connection of communication cable.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x01	XP Builder	There's not Password File.	This message shows up when making it newly because there is no password setting file in the device. When making it newly, it is initialized with no password.
		0x02	XP Builder	Failed to Create Password File.	It make new password setting file when there is no password setting file. But downloading is stopped when it fails to make this file because of device error. If this problem is repeated, Contact the near Customer Service Center.
		0x03	XP Builder	Invalid Backup Media.	Communication status is abnormal. Route information is not correct to save project data. If this problem is repeated, Contact the near Customer Service Center.
		0x04	XP Builder	Failed to Create version File.	In case that the version information file doesn't exist in the device, that file is made newly. In case that the device has error and fails to make that file, download is stopped. If this problem is repeated, Contact the near Customer Service Center.
		0x05	XP Builder	File Size Error.	There is version information file. In case that because of error of device, it fails to read version information, because the device doesn't know version, download is stopped. If this problem is repeated, Contact the near Customer Service Center.
		0x06	XP Builder	Failed to get Project ID.	In case of not reading file where project property is included, download is stopped. If this problem is repeated, Contact the near Customer Service Center.
		0x07	XP Builder	Failed to read history alarm data.	In case of not reading information about alarm history because of error of NVRAM, download is stopped. If this problem is repeated, Contact the near Customer Service Center.
		0x08	XP Builder	Failed to read CF Card information.	Project is set to store data at CF card equipped at device. By the way, now it can't read information about CF card. Check the installation status of CF card and if it is normal, check the CF card. If this problem is repeated, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
Project download	0x26	0x09	XP Builder	Failed to read USB information.	Project is set to store data at USB storage device equipped at device. By the way, now it can't read information about USB storage device. Check the installation status of USB storage device and if it is normal, check USB storage device. If this problem is repeated, contact Customer Service Center.
		0x0A	XP Builder	Failed to read Flash memory information.	In case that it can't know information about memory status, download is stopped. If this problem is repeated, contact Customer Service Center.
		0x0B	XP Builder	Failed to clear Temp Directory.	In case that because of error of Flash Disk, it can't delete the directory made temporally for download because of error of Flash Disk, download is stopped. If this problem is repeated, contact Customer Service Center.
		0x0C	XGT Panel	Failed to delete Font File. Please reboot XGT Panel.	In case that it fail to delete the font file of previous project because of error of XGT Panel, download is stopped. If this problem is repeated, contact Customer Service Center.
		0x0D	XGT Panel	Failed to delete Image File. Please reboot XGT Panel.	In case that it fail to delete the image file of previous project because of error of XGT Panel, download is stopped. If this problem is repeated, contact Customer Service Center.
		0x0E	XGT Panel	Failed to delete Sound File. Please reboot XGT Panel.	In case that it fail to delete the sound file of previous project because of error of XGT Panel, download is stopped. If this problem is repeated, contact Customer Service Center.
		0x0F	XGT Panel	There's no downloaded project. It needs to download whole project	It can't download part or fixed part in case there is no downloaded project. In case of this, download again. If this problem is repeated, contact Customer Service Center.
		0x10	XP Builder	Backup path is invalid. Please check the path that project is downloaded.	When user change the storage location of project data including image and font, if there is not respective routine, it make newly. By the way, download is stopped in case it fails to make newly. When it is designated as CF card, it can occur in case CF card is not installed. If this problem is repeated and not referred in the above, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x11	XGT Panel	Failed to delete previous project archive. Please reboot XGT Panel.	The project backup file downloaded already can be deleted because of error of XGT Panel. Reboot XGT Panel. If this problem is repeated, contact Customer Service Center.
Project download	0x26	0x12	XGT Panel	Failed to delete past project data files. Please download project again.	When downloading, the log data area in the NV-RAM is initialized in case of selecting previous project's the monitor data deletion option. By the way, in case of failing this, downloading is stopped. If this problem is repeated, contact Customer Service Center.
		0x15	XGT Panel	Failed to initialize LOGGING area in NV RAM. Please download project again.	When downloading, the log data area in the NV-RAM is initialized in case of selecting previous project's the monitor data deletion option. By the way, in case of failing this, downloading is stopped. If this problem is repeated, contact Customer Service Center.
		0x16	XGT Panel	Failed to initialize RECIPE area in NV RAM. Please download project again.	When downloading, the alarm history in the NV-RAM is initialized in case of selecting the previous project's monitor data deletion option. By the way, in case of failing this, downloading is stopped. If this problem is repeated, contact Customer Service Center.
		0x17	XGT Panel	Failed to initialize ALARM area in NV RAM. Please download project again.	The downloaded font file is moved into original storage location but when this fails, downloading is stopped. If this symptom is repeated, contact Customer Service Center.
		0x18	XGT Panel	Failed to install font files. Please download project again.	The project data is divided into several files according to the contents but when this fails, downloading is stopped. If this symptom is repeated, contact Customer Service Center.
		0x19	XGT Panel	Failed to unmarshall download file. Please download project again.	The data divided according to the contents is moved to the original storage location but when this fails, downloading is stopped. If this symptom is repeated, contact Customer Service Center.
		0x1A	XGT Panel	Failed to install new project data files. Please download project again.	The downloaded project is not installed normally because of error of the Flash Disk. Download the project again. If this symptom is repeated, contact Customer Service Center.
		0x1B	XGT Panel	Failed to merge data files. Please download project again.	The downloaded project zip file is moved to the original storage location but when it fails, downloading is stopped. If this symptom is repeated, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x1C	XGT Panel	Failed to save new project archive. Please download project again.	There is a program to reboot engine program after downloading in the device but when it fails, this message shows up. But because the downloading is completed if you reboot engine directly, it works normally. The program name to reboot is startup.exe and it can be installed by engine upgrade function.
Project download	0x26	0x1D	XGT Panel	Failed to XGP Panel startup program. Please update XGT Panel Software.	It can't find software to reboot XGT Panel. Update the XGT Panel.
		0x1E	XGT Panel	Project data is not downloaded. Please download project again.	The project data was not downloaded normally because of communication error. Check the connection status of communication cable and If this symptom is repeated, contact Customer Service Center.
		0x1F	XGT Panel/ XP-Builder	Failed to read Version information file. Please download project again.	There is version information file but when it can't read file normally because of the device error, downloading is stopped because it doesn't know version. If this symptom is repeated, contact Custom Service Center
Project download from USB storage device	0x27	0x51	XGT Panel	Cannot find project data in USB Storage	There is no USB or device status of USB is not good or project is not saved properly.
		0x52	XGT Panel	Project information file is not in USB Storage.	The project is not saved normally in the USB. Check whether there is XP_Project folder and [project name].inf in the USB or not.
		0x53	XGT Panel	Failed to read project information file.	It can't read project information file because the project is not saved in the USB normally. Save the project again from XP-Builder to the USB.
		0x54	XGT Panel	Device type is not matched.	The connected device type is not same as the device type set in the project in the USB. In case of this, project can't be downloaded into the device. Edit the project again or download according to the connected device.
		0x55	XGT Panel	Cannot read user password.	Information about the password can't be red because of the device error. If this symptom is

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
					repeated, contact Customer Service Center.
		0x56	XGT Panel	Password is not matched.	When saving the project, the password inputted by user is not same as present connection password. Input correct password and save the project.
Project download from USB storage device	0x27	0x57	XGT Panel	Cannot read XGT Panel software version.	There is version information file but when it can't read file normally because of the device error, downloading is stopped because it doesn't know version. If this symptom is repeated, contact Customer Service Center.
		0x58	XGT Panel	XGT Panel software is old version. Please update XGT Panel.	The version of XP-Builder where project is saved is not compatible with present XGT Panel. Update the XGT Panel.
		0x58	XGT Panel	XP-Builder is old version. Please update XP-Builder.	The version of XP-Builder where project is saved is not compatible with present XGT Panel. Update the XGT Panel.
		0x59	XGT Panel	Cannot read download data format version.	There is storage structure version information file. But when it can't read this file because of the device error, downloading is stopped because it doesn't know the version. If this symptom is repeated, contact Customer Service Center.
		0x5A	XGT Panel	Download data format version is not matched. Please update XGT Panel.	Data storage type is not correct. Update XGT Panel.
		0x5A	XGT Panel	Download data format version is not matched. Please update XP-Builder.	Data storage type is not correct. Update the XP-Builder.
		0x5B	XGT Panel	Data file path is invalid.	There is no project data file at designated location. Check the connection status of USB and if there is no error, save the project to USB again.
		0x5C	XGT Panel	Download file name length is invalid.	The name of project data file is not saved correctly. Save the project at the USB again. If this symptom is repeated, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x5D	XGT Panel	Cannot find download file.	The project data file can't be found. Save the project data file at the USB again. When this symptom is repeated, check the USB. If there is no error, contact Customer Service Center.
		0x5E	XGT Panel	Download file size is invalid.	The project data file is not saved correctly. Save the project data file at the USB again. When this symptom is repeated, check the USB. If there is no error, contact Customer Service Center.
Project download from USB storage device	0x27	0x5F	XGT Panel	Cannot find project backup file.	The project backup file which should be downloaded is not downloaded because of communication error. Download again.
		0x60	XGT Panel	Project backup file size is invalid.	The project backup file is saved incorrectly. Save the project at the USB storage equipment again. When this symptom is repeated, check the USB storage equipment and if the USB is normal, contact Customer Service Center.
		0x61	XGT Panel	Font file name length is invalid.	The font file's name is saved incorrectly. Save the project in the USB again. If this symptom is repeated, contact Customer Service Center.
		0x62	XGT Panel	Font file is not downloaded.	The font file which is needed for project is not saved in the USB storage equipment. Save the project in the USB. If this symptom is repeated, contact Customer Service Center.
		0x63	XGT Panel	Font file size is invalid.	The font file is not saved correctly. Save the project at the USB. Save the project at the USB. If this symptom is repeated, check the USB and if the USB is normal, contact Customer Service Center.
		0x64	XGT Panel	Cannot unmarshall download file.	The data can't be analyzed because the project data file is not saved correctly. Save the project at the USB again. If this symptom is repeated, check the USB and if the USB is normal, contact Customer Service Center.
		0x65	XGT Panel	Cannot delete previous project data.	The data of the project can't be deleted because of device error. If this symptom is repeated, check the USB and if the USB is normal, contact Customer Service Center.
		0x66	XGT Panel	Cannot move new font files.	Downloaded font file is moved to the original storage location. But when it fails, the downloading is stopped. If this symptom is repeated, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x67	XGT Panel	Cannot move new project data files.	The project data classified according to the content is moved to the original storage location. But when it fails, the downloading is stopped. If this symptom is repeated, contact Customer Service Center.
		0x68	XGT Panel	Cannot move project backup file.	The downloaded project zip data is moved to the original storage location. But when it fails, the downloading is stopped. If this symptom is repeated, contact Customer Service Center.
XGT Panel booting	0x28	0x01	XGT Panel	Previous instance is not terminated.	XGT Panel software was already started. Reboot the device. If this symptom is repeated, contact Customer Service Center.
		0x02	XGT Panel	Start Server Fail. Restart XGT Panel	The XGT Panel software can't initialize the communication status normally. Check the communication status again. If this symptom is repeated when communication is normal, contact Customer Service Center.
		0x03	XGT Panel	Failed to Start Echo Server.	The XGT Panel software can't initialize the communication status normally. Check the communication status again. If this symptom is repeated when communication is normal, contact Customer Service Center.
		0x04	XGT Panel	Failed to accept connection.	The XGT Panel software can't initialize the communication with the XP-Builder normally. Check the communication status again. If this symptom is repeated when communication is normal, contact Customer Service Center.
		0x05	XGT Panel	Failed to rename UpdateNew.exe	In the present XGT Panel the new updated XGT Panel software's name can not be changed. After rebooting the XGT Panel, update again. When rebooting, if you can't start engine, delete \\FlashDisk\LSISProduct\UpdateNew.exe in the XGT Panel. Then if you touch Update.exe and execute the XGT Panel, it can be update mode. Try update again. If this symptom is repeated, contact Customer Service Center

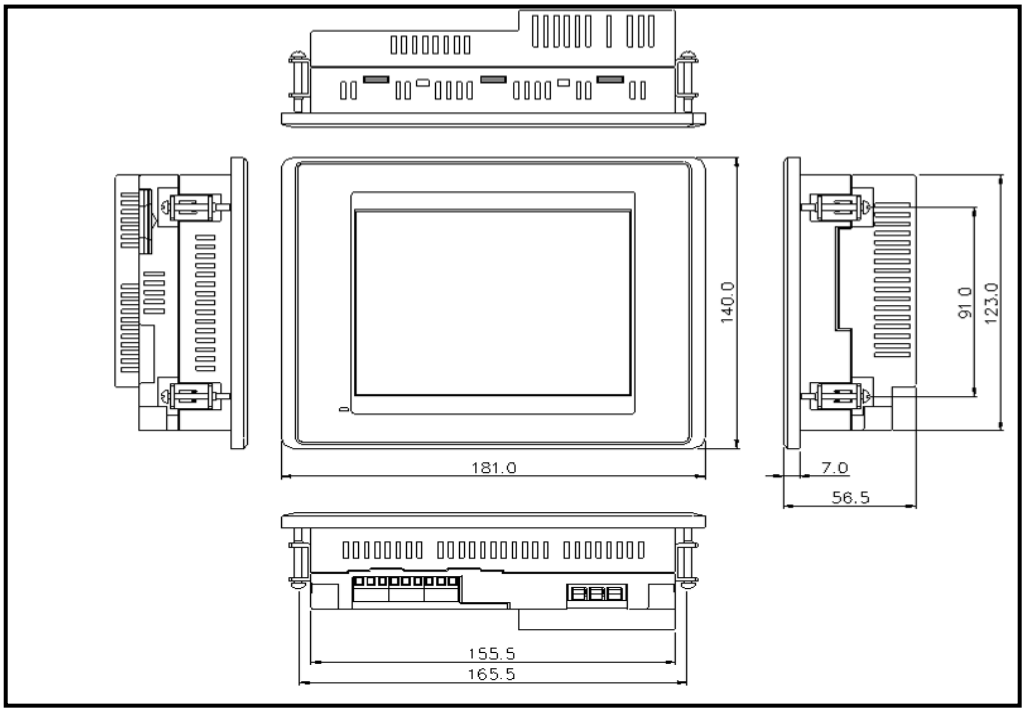
Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x06	XGT Panel	Failed to Delete Update.exe.	The new module is downloaded by the XGT Panel update but the previous module is not deleted. Reboot the device. If the XGT Panel software is not started normally, touch \\FlashDisk\LSISProduct\Update.exe in the XGT Panel. At this time, if XGT is set as update mode, update again. If this symptom is repeated, contact Customer Service Center.
Communication between other XP Builder-XGT Panel	0x29	0x30	XGT Panel	Failed to modify password file.	The device connection password can't be modified because of error of Flash Disk of XGT Panel. Reboot the device. If this symptom is repeated, contact Customer Service Center.
		0x31	XGT Panel	Password-related command transmission payload error	It failed to set and modify password because of communication status error. If this symptom is repeated, contact Customer Service Center.
		0x32	XGT Panel	There is no XGT Panel connection setting file.	The connection setting file of XGT Panel can't be found.
		0x33	XGT Panel	Modified content can't be saved in the XGT Panel connection setting file.	The modified information can't be saved at the connection setting file of XGT Panel. If this symptom is repeated, contact Customer Service Center.
		0x34	XGT Panel	Failed to set the time	The XGT Panel's time can't be set. If this symptom is repeated, contact Customer Service Center.
XGT panel S/W update	0x30	0x21	XGT Panel/ XP-Builder	Failed to Create Initialized Module Version File.	Because the each module version information can't be read because of XGT Panel's error, it failed to initialize. If this symptom is repeated, contact Customer Service Center.
		0x22	XGT Panel/ XP-Builder	Module version file size is invalid.	The each module version information can't be read because of XGT Panel's error. If this symptom is repeated, contact Customer Service Center.
		0x23	XGT Panel/ XP-Builder	Can't Read module version file.	The each module version information can't be read because of XGT Panel's error. If this symptom is repeated, contact Customer Service Center.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x24	XP-Builder	There's no file to download.	The version information list to update is empty. Check the module folder newly designated at XP-Builder and if there is no error, download XGT Panel module and try update again. If this symptom is repeated, contact Customer Service Center.
		0x25	XP-Builder	Downloaded file is not Module to download.	The wrong file which is not in the new module list of XGT Panel is downloaded. Try update of XGT Panel again. If this symptom is repeated, contact Customer Service Center.
XGT panel S/W update	0x30	0x26	XGT Panel	Not enough space in flash memory.	The space to copy new module in XGT Panel is not enough. After deleting the unnecessary file or backing up the previous file to the movable storage equipment, try update again. If this symptom is repeated after deleting, contact Customer Service Center.
		0x27	XGT Panel	Failed to Copy module ~.dll	The new module is not installed because of XGT Panel's error. After rebooting the device, touch \\FlashDisk\LSISProduct\Update.exe and set the device as update mode. Then update again. If this symptom is repeated, contact Customer Service Center.
		0x28	XGT Panel	Failed to Start Engine. Please update engine again.	To reboot the engine is not available because of wrong file which is developed by downloading wrong module or communication error. Touch \\FlashDisk\LSISProduct\Update.exe and set the device as update mode. Then update again. If this symptom is repeated, contact Customer Service Center.
		0x2A	XGT Panel	Failed to write Data to Module version File.	It is failed to record the version information during update of XGT Panel. If this symptom is repeated, contact Customer Service Center.

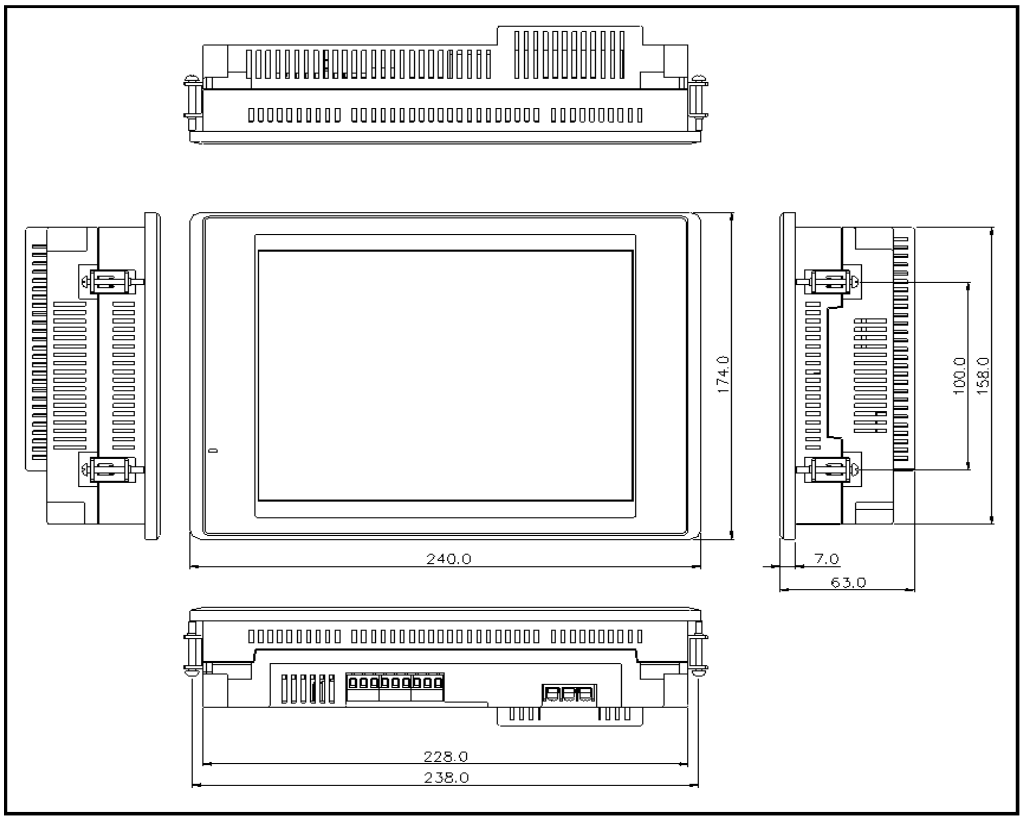
Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x2B	XGT Panel	There's no downloaded file.	To reboot the engine is not available because of wrong file which is developed by downloading wrong module or communication error. Touch \\FlashDisk\LSISProduct\Update.exe and set the device as update mode. Then update again. If this symptom is repeated, contact Customer Service Center.
		0x2C	XGT Panel	(improper communication command) Current state is not authorized.	To reboot the engine is not available because of wrong file which is developed by downloading wrong module or communication error. Touch \\FlashDisk\LSISProduct\Update.exe and set the device as update mode. Then update again. If this symptom is repeated, contact Customer Service Center.
XGT panel S/W update	0x30	0x2D	XGT Panel	(improper communication command) A module to download is not listed up yet.	To reboot the engine is not available because of wrong file which is developed by downloading wrong module or communication error. Touch \\FlashDisk\LSISProduct\Update.exe and set the device as update mode. Then update again. If this symptom is repeated, contact Customer Service Center.
		0x2E	XGT Panel	Failed to Initialize Update program.	XGT can't be set as update mode because of XGT Panel error. After downloading new XGT Panel module through homepage, etc., copy UpdateNew.exe file among new module to the \\FlashDisk\LSISProduct\ directory of XGT Panel through the movable storage equipment. Then reboot the XGT Panel and go update mode and update again. If this symptom is repeated, contact Customer Service Center.

Appendix 2. Dimension (Unit: mm)

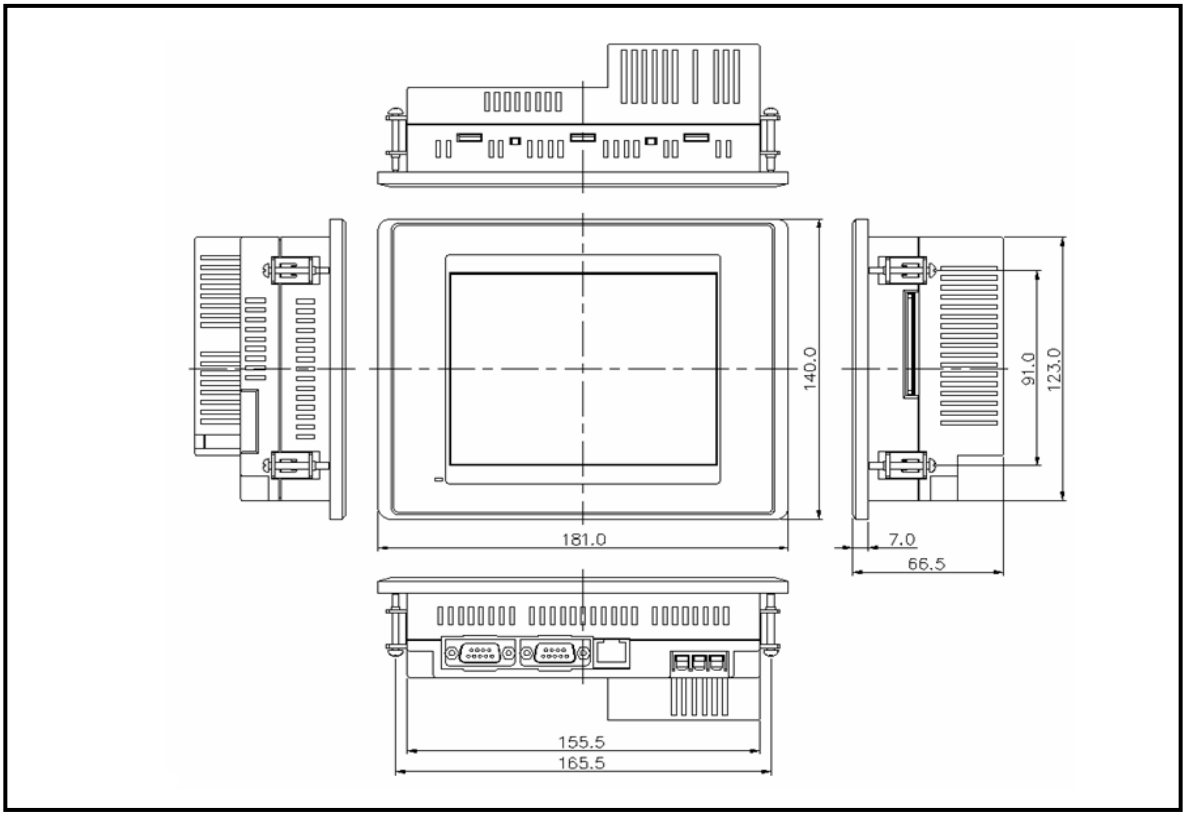
(1) XP30-BTE/DC, XP30-TTE/DC



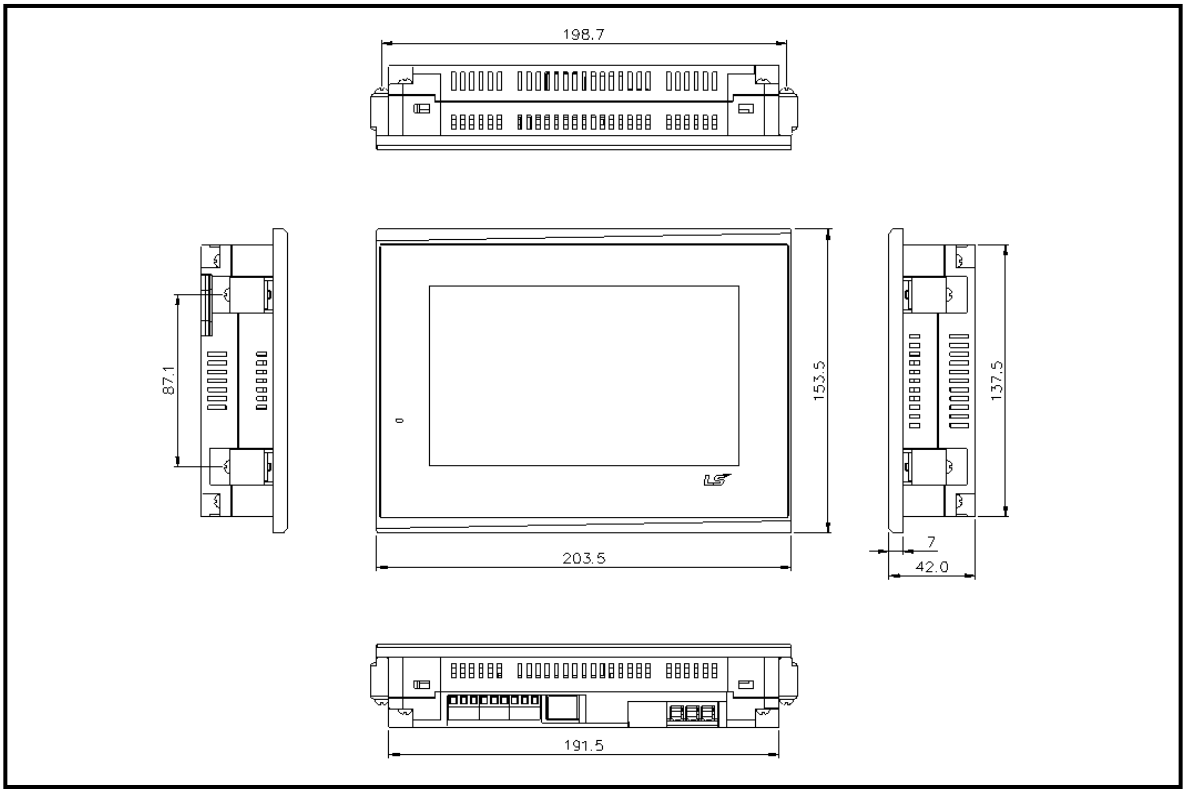
(2) XP50-TTE/DC



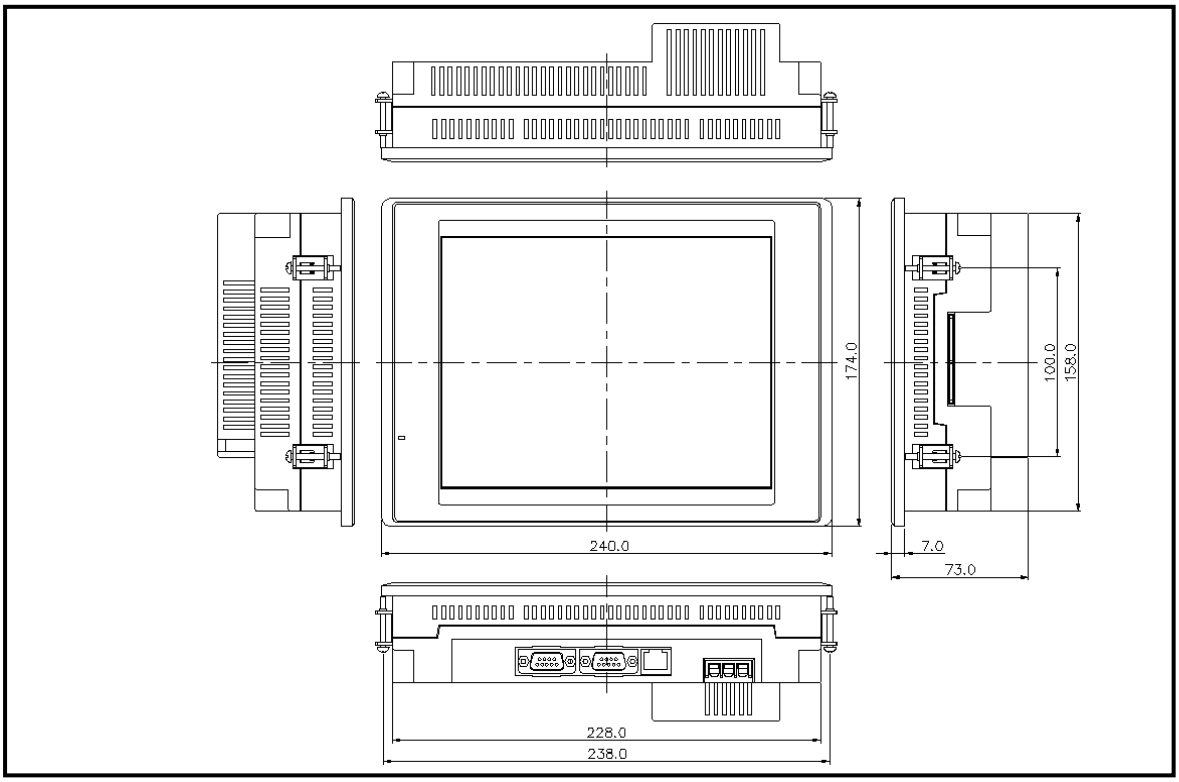
(3) XP30-BTA/DC, XP30-TTA/DC



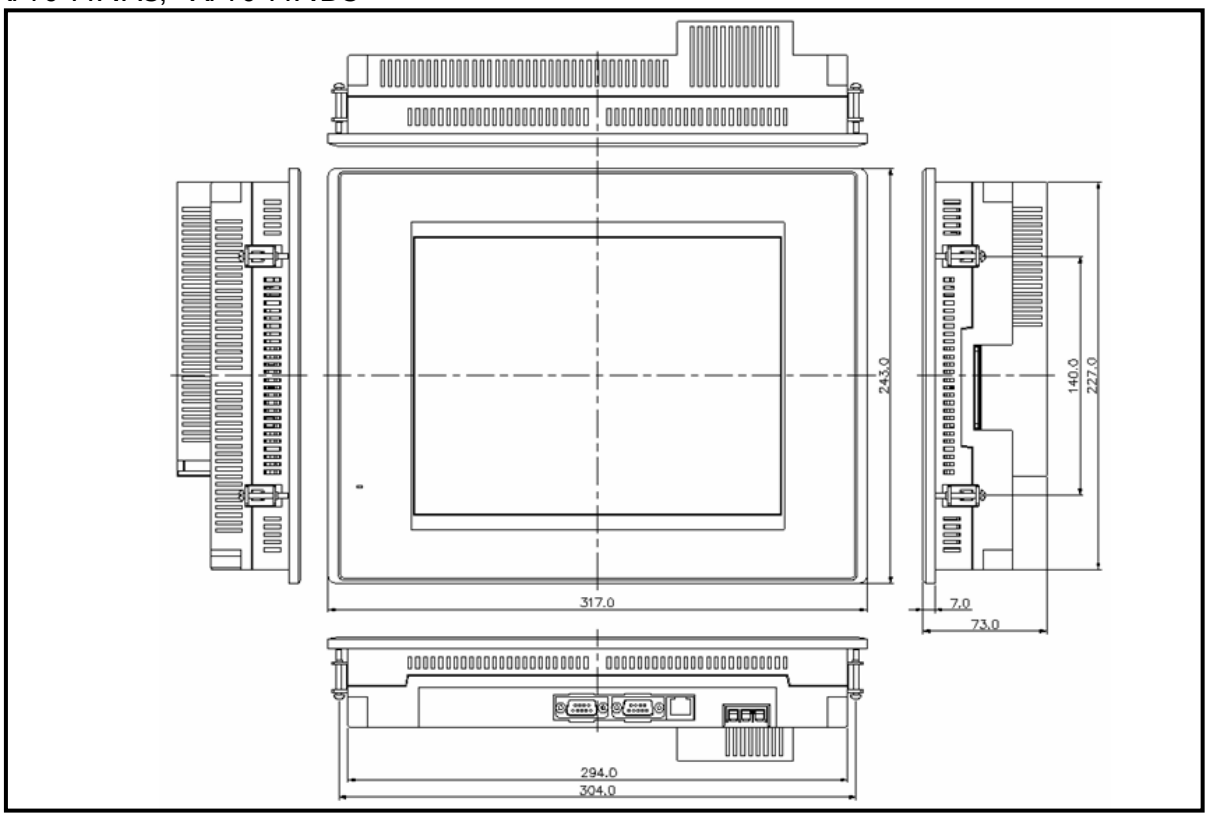
(4) XP40-TTE/DC, XP40-TTA/DC



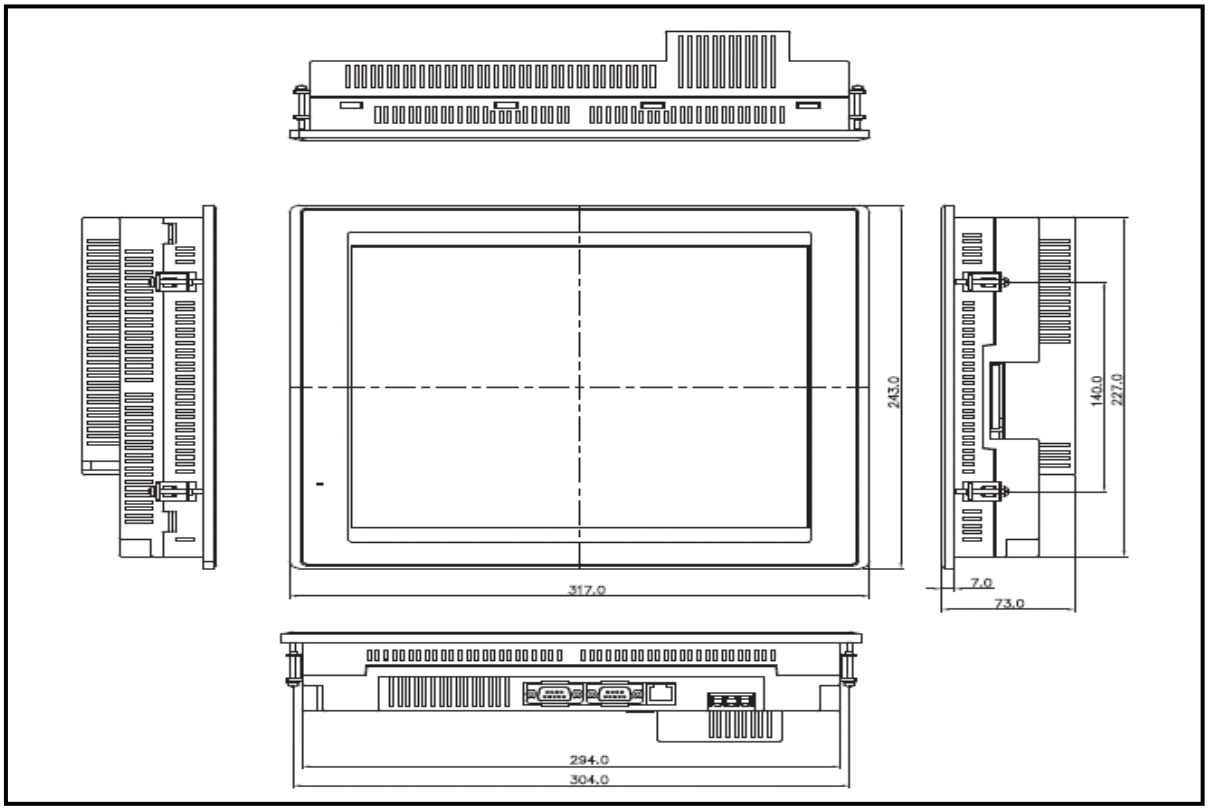
(5) XP50-TTA/DC



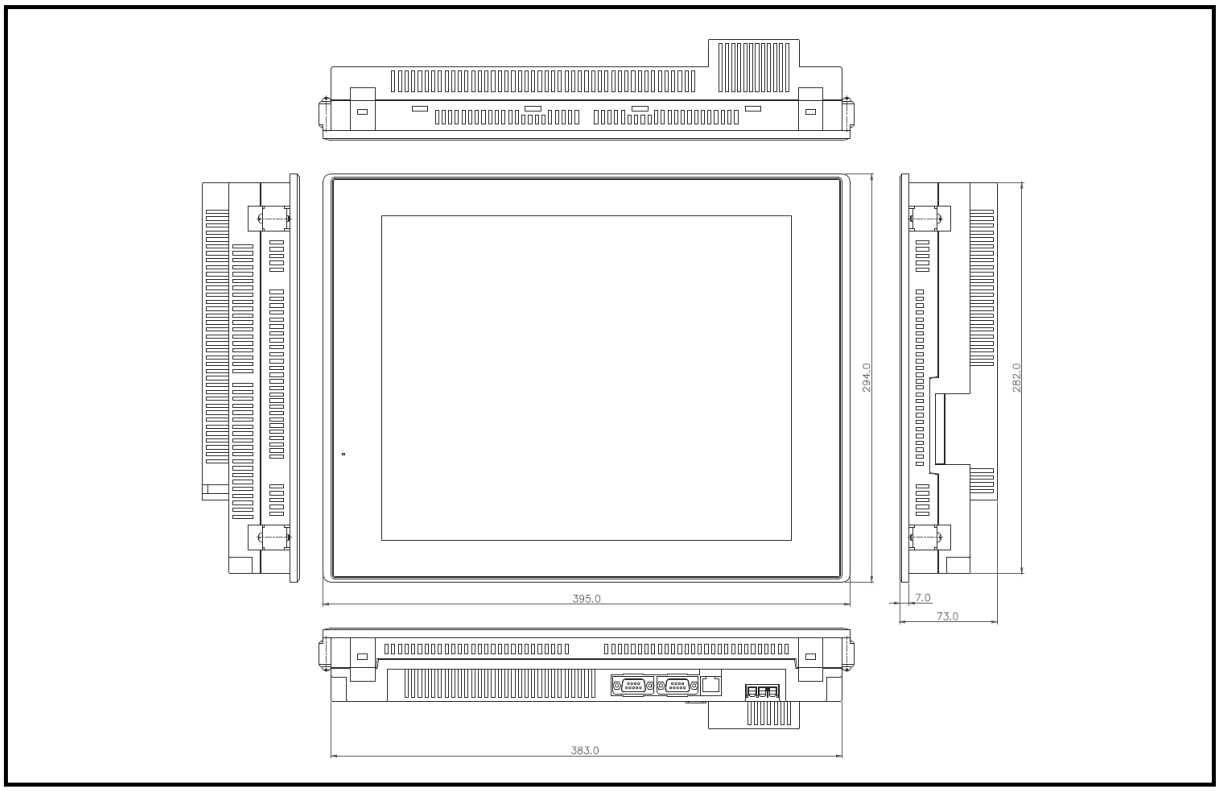
(6) XP70-TTA/AC, XP70-TTA/DC



(7) XP80-TTA/AC, XP80-TTA/DC



(8) XP90-TTA/AC



Warranty

1. Warranty Period
The product you purchased will be guaranteed for 18 months from the date of manufacturing.

2. Scope of Warranty
Any trouble or defect occurring for the above-mentioned period will be partially replaced or repaired. However, please note the following cases will be excluded from the scope of warranty.

Any trouble attributable to unreasonable condition, environment or handling otherwise specified in the manual,
Any trouble attributable to others' products,
If the product is modified or repaired in any other place not designated by the company,
Due to unintended purposes
Owing to the reasons unexpected at the level of the contemporary science and technology when delivered.
Not attributable to the company; for instance, natural disasters or fire

3. Since the above warranty is limited to HMI unit only, make sure to use the product considering the safety for system configuration or applications.

Environmental Policy

LS Industrial Systems Co., Ltd supports and observes the environmental policy as below.

Environmental Management

LS Industrial Systems considers the environmental preservation as the preferential management subject and every staff of LS Industrial Systems use the reasonable endeavors for the pleasurably environmental preservation of the earth.

About Disposal

LS Industrial Systems' PLC unit is designed to protect the environment. For the disposal, separate aluminum, iron and synthetic resin (cover) from the product as they are reusable.

LS values every single customers.

Quality and service come first at LSIS.

Always at your service, standing for our customers.

http://eng.lsis.biz

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※ LS Industrial Systems constantly endeavors to improve its product so that information in this manual is subject to change without notice.

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