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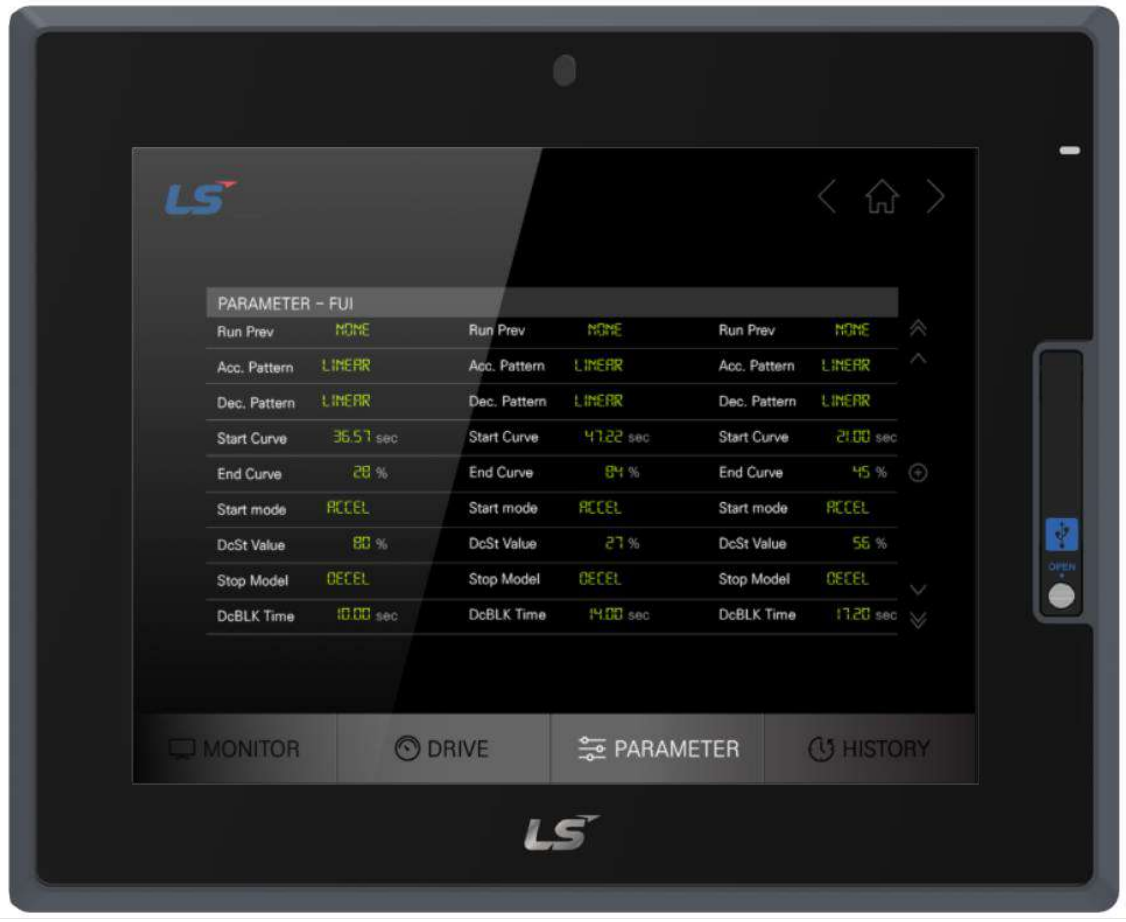
Human Machine Interface

XGT PANEL

LXP Series

User Manual



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 safety and effectively, please read this instruction manual thoroughly before use.

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

- Safety precaution is classified into 'Warming' 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 fallowing meanings.

  ⚠ Be cautions, for danger may be present.

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

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

Class A equipment (Broadcasting communication equipment for business use)

• Since this device is registered for electromagnetic compatibility for business use (Class A), sellers or users should be aware of this point, and it is intended for use outside the home.

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, erroneous operation.

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

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

- **Do not touch the conductive part of the HMI. It may cause an electric shock, which may cause malfunction.**

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.

- **Tighten the crimp terminal to the specified torque, and crimp the external connection connector using the specified tool or solder it correctly.**

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 HMI 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. other 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.

- **When mounting or removing the HMI from the panel, be sure to shut off all power being used by the system. It may cause electric shock, malfunction.**

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

  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	‘22.06	First Edition	-
V1.1	’22.06	Change the general type Main Unit	2-4

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

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Chapter 1 Overview

1.1 How to use the Instruction Manual

Sequence	Item	Contents
Chapter 1	Overview	It describes and provides information about this manual.
Chapter 2	Standard Specification	It describes features for each XGT Panel
Chapter 3	System Configuration	It describes XGT Panel and system configuration for each XGT Pane
Chapter 4	Installation and Wiring	It describes the installation, wiring and precautions for reliability of the PLC system.
Chapter 5	XGT Panel Menu explanation	It describes the XGT Panel Menu
Chapter 6	Maintenance	It describes inspection categories and methods for long-term normal operation of the HMI system.
Chapter 7	EMC Standard Certification	It describes the system configuration for EMC standards.
Appendix 1	Trouble Shooting	It describes a variety of error contents and measures.
Appendix 2	Appearance Size	It describes the dimensions of the XGT Panel.
Appendix 3	Warranty details and environmental policy	-

Notes

This manual does not explain XP-Builder or PLC connections. Please refer to the related manual for these functions.

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1.2 Features

The XGT Panel has the following features.

(1) Various types of external interfaces
(a) Supports various USB devices, Ethernet, and maximizes the customer's usability.
(b) Connect devices such as PLC · Inverter communication in a variety of ways.
• RS-232C, RS-422/485 and Ethernet (10Base-T / 100Base-TX / 1000-Base-T) communication with the control device.

(2) Projects can be sent in various ways
(a) Project transmission using Ethernet port
(b) Project transfer using USB Loader cable
(c) Project transmission using USB memory

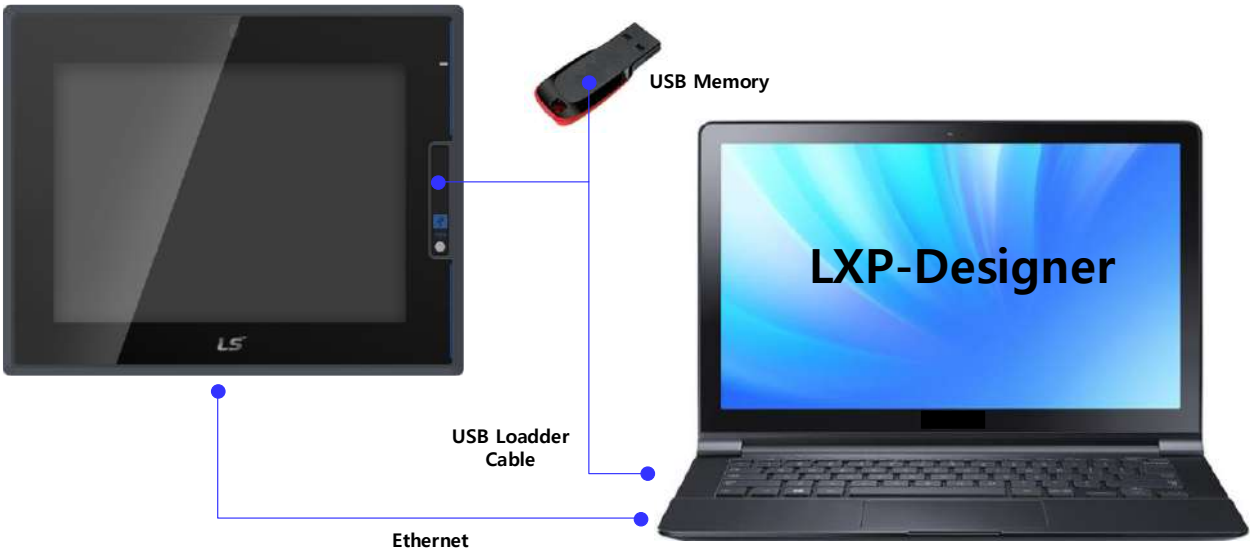

Figure 0-1

(3) Providing a high-quality screen
(a) It adopts high-performance liquid crystal display (LCD) to provide high picture quality and sharpness.
• It adopts thin film transistor liquid crystal display (TFT LCD) which can display 24bit color.
(b) Supports various graphic formats.
• Supports 1024 X 768 graphic formats precisely and with realistic representation.
• Supports behavior for animations (GIF).
(c) Supports external display output.
• HDMI output is supported.
• Duplicate mode and extended mode enable screen output in various configurations.

(4) Application of Projective CAP touch panel
(a) Touch sensitivity is improved by applying electrostatic touch panel.
(b) Multi-touch and gesture functions.
(c) Various types of touch setting functions can be used according to user's work environment.

(5) Built-in camera support
(a) Supports high resolution of up to 720p (HD) with three levels of up and down angle adjustment
(b) Applied to a variety of applications depending on the customer's usage environment.
Support Features: Live View, Black Box, Snap Shot, Web Stream, Audio

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(6) External camera support

(a) USB and IP type cameras can be connected for use.

(b) The specifications that can be supported according to the camera type are as follows.

Item	USB camera	IP camera
Resolution	640x480 ~ 1920x1080	
Codec	Video: MJPEG, H.264 Audio: PCM RAW	
Power consumption	≤ 500mA	Separate external power supply
Supported OS	Linux	-
Supporting System	UVC	RTSP
Max Mounting Quantity	2 devices (USB0,USB1)	Depends on network configuration
Guaranteed product[1)]	A USB camera that meets the above standards	VSTARCAM-200M Hanwha Techwin QNO-6012R1 TP-LINK C210 HIKVISION DS-2CV2Q DAHUA DH-SF125

1) For IP cameras that are guaranteed to operate, this means a product validated by LS Electric.

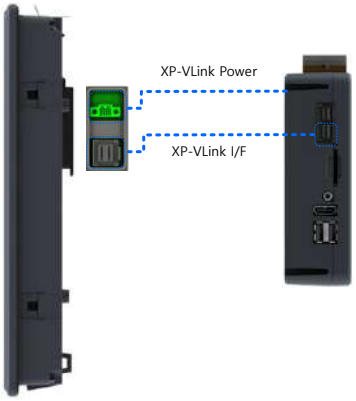
(7) Supports LXP dedicated extended memory

(a) Data protection is possible by applying dedicated I/F.

(8) Supports XP-VLink function

(a) By supporting XP-VLink function, it is possible to combine/separate the product, so various installation configurations are possible.

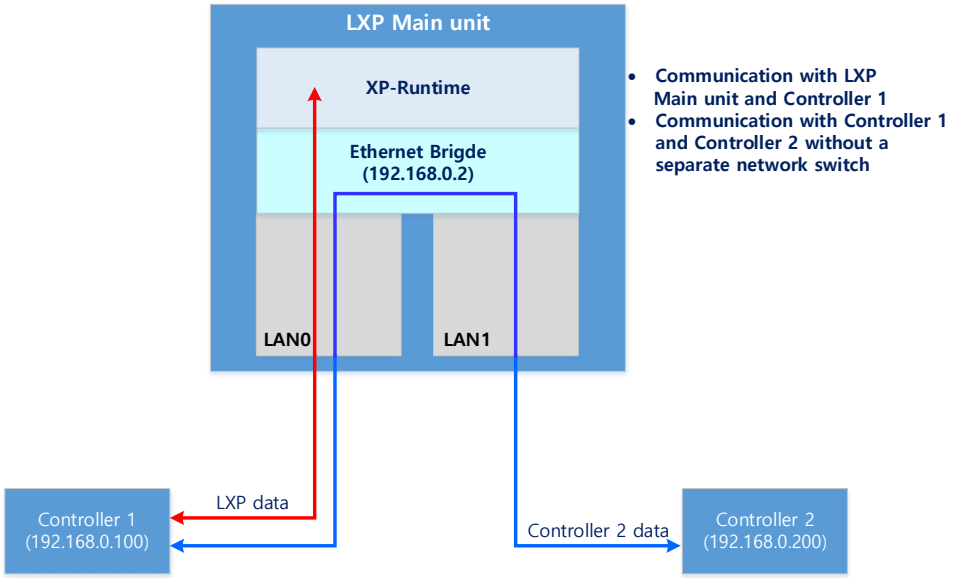
<Example of associative configuration>



< Example of detachable configuration >

(9) Supports Ethernet bridge function

(a) Ethernet bridge means a function that connects network segments in the data link layer of the OSI model, LXP series supports Ethernet bridge function to connect data between LAN0 and LAN1, enabling system configuration without a network switch.

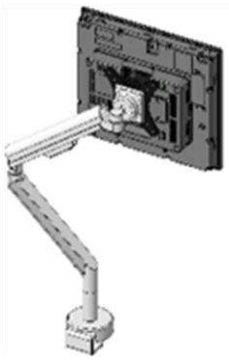


< Example of setting LAN0 as an Ethernet bridge >

(10) Support for VESA Hall and Din-rail Mount

(a)It supports VESA hall on Main and Display, so it can be installed in various ways.

(b)Din-rail installation is possible for the main unit that supports XP-VLink..



<Example of VESA Mount>

<Example of Din rail installation of the Main Unit >

(11) Provides multilingual support and various fonts

(a) Supports multi-language languages.

- It uses the method of transferring the window / user font used on the computer to XGT Panel.
- No separate multilingual language development is required.
- Multilingual language support is an advantage of Windows CE.

(b) Supports simultaneous display of 12 languages.

- Simultaneous display in 12 languages
- Even when the XGT Panel is in operation, you can switch to another language by using special switches.

(c) Various fonts are provided.

- Windows / user fonts can be used, so various expressions are possible.
- You can freely adjust font size and shape.

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(12) Providing various convenience functions

(a) Various alarm functions are provided.

- The history alarm can be divided into several alarm groups and alarm lists. The desired alarm can be displayed on the screen with the alarm explorer.
- The flow alarm displays the current alarm at the bottom of the screen.
- The system alarm is displayed when a critical problem occurs during operation.

(b) It provides a logging function.

- It provides periodic logging that works repeatedly according to the time and device status and conditional logging according to device conditions.
- Backup provides up to 1 Mbyte.
- You can backup to a USB.
- Backup data is stored in Excel format, so you can use it conveniently.

(c) It provides a recipe function.

- It provides read / write function.
- One recipe provides up to 100 double words (DWORD), 16 blocks.
- You can backup to a USB.
- Backup data is stored in Excel format, so you can use it conveniently.

(d) It provides a scheduler function.

- Up to 32 schedulers can be set.

(e) It provides a printing function.

- Screen / alarm printing function.
- Print out the printout.

(f) It provides scripting capabilities.

- User-written scripts provide more flexibility.
- Global / Object / Screen display.

(13) Stable products conforming to international standards

(a) CE, KC (Electromagnetic compatibility registration) standard acquisition

(14) Compliance with protection standards (EHSR standards)

(a) Ensure that there is no explosive reaction between the materials used and potentially explosive components
- Compliance with specifications

(b) Protects against other explosion hazards
- Compliance with specifications

1.3 Terminology

It describes terms used in this manual.

Term	Definition	Note
Module	A standard element that has a specified function which configures the system. Devices such as I/O board, which are inserted onto the mother board or base unit.	Ex) CPU module Power Module I/O module
Unit	A module or a group of modules that is the smallest unit in the operation of the HMI system, and is connected to other modules or groups of modules to compose the HMI system	-
XP-VLink	A function that allows the LXP product to be separated and installed	-
PLC System	It is a system consisting of PLC and peripheral devices, and is configured to be controllable.	-
LXP-Designer	Software used to write and edit the project	-
XP-Manager	Software that can be configured to communicate between XGT Panel	-
XP-Remote	Software used to remote monitor and control the XGT Panel	-
Cnet module	Computer Link	-
FEnet module	Fast Ethernet Network	-
RTC	Abbreviation of Real Time Clock, It is used to call general IC that contains the clock function.	-
DC Voltage	A constant voltage with no change in the flow and direction of charge	
AC Voltage	Voltages whose charge flow and direction change periodically with time	
Ground	Electrical device with a connecting ground wire in to keep the electric potential of the device to zero	
Electric shock	The current flows in the human body, causing injury or shock.	
Caution	Failure to observe the instructions may cause dangerous situations that may result in serious injury or damage to property or property damage.	
Warning	Failure to observe the instructions may cause dangerous situations that may result in death or serious injury.	
Caution Mark	As a general precaution, when you need to observe the instructions given in the user's manua	

1.4 Product Name Rule

It describes terms used in this product's names.

(1) Display unit

LXP-[A][B][C][D]-[E]

Menu	Sign	Contents	Note
(A) Type	D	Display unit	-
(B) LCD size	12	12.1" LCD	-
(C) Camera option	0	Support	-
	1	Not supported	-
(D) XP-VLink support	0	Support	-
	1	Not supported	-
(E) Reserved	Blank	-	
	EXP	Export product	
	MR	ship certification	
	EX	Explosion proof product	
	G3	Coated product	

(2) Main unit

LXP-ABCD-E

Menu	Sign	Contents	Note
(A) Type	M	Main unit	-
(B) Runtime option	0	Runtime installed	-
	1	Runtime not installed	
(C) XP-Vlink	0	Support	-
	1	Not supported	-
(D) Power	D	DC 24V	-
(E) Reserved	Blank	-	
	EXP	Export product	
	MR	ship certification	
	EX	Explosion proof product	
	G3	Coated product	

(3) Extended memory option

LXP - A B C - D

Menu	Sign	Contents	Note
(A) Type	O	Option unit	-
(B) Option type	M	Extended memory	-
(C) Memory capacity	64G	64GB	-
(D) Reserved	Blank	-	
	G3	Coated product	

(4) XP-VLink Cable option

LXP - A B C D

Menu	Sign	Contents	Note
(A) Type	O	Option unit	-
(B) Option type	C	detachable cable	-
(C) Cable type	0	Small to medium size	-
	1	Large size	21" or larger
(D) Cable length	03M	3m	
	05M	5m	

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Chapter 2 Standard Specification

2.1 General Standards

General specifications of XGT Panel are as follows

No.	Item	standard				Related Standards
1	Ambient temperature	-10℃~+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 each in X, Y and Z direction	IEC 61131-2
		5≤f< 8.4 Hz	-	3.5mm		
		8.4≤f≤150 Hz	9.8 ㎨	-		
		Continuous vibration				
		frequency	acceleration	Amplitude		
		5≤f< 8.4 Hz	-	1.75mm		
		8.4≤f≤150 Hz	4.9 ㎨	-		
6	Shock endurance	* Maximum shock acceleration: 147m/s2 (15G) * Duration time: 11ms * Pulse wave: half sine pulse (3 times each in X, Y and Z directions)				IEC 61131-2
7	Noise Immunity	Square wave Impulse noise	DC: ±1,000V			LS ELECTRIC
		Electrostatic Discharge Immunity	±4 kV(contact discharge), ±8 kV(air discharge)			IEC 61131-2 IEC 61000-4-2
		Electromagnetic Radiated Emissions	80 ~ 1,000 MHz, 10 V/m 1.4 ~ 6.0 GHz, 3 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	1kV	
		Surge	Category	Power module	Communication interface	IEC 61131-2
			Voltage	0.5kV	1kV	
8	Environment	Free from corrosive gases and excessive dust				-
9	Operating height	Below 2,000m (6,562ft)				-
10	Pollution degree	2 or less				-
11	Cooling method	Natural Air-Cooling				-

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Note

(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) Noise Immunity
- The noise standard is the standard of the HMI body and the operation of the video display device connected to HDMI is not guaranteed.

2.2 Function standards

Function specifications of XGT Panel are as follows

(1) Normal Type

1) Display unit

Item		LXP-D1200	LXP-D1201	LXP-D1210	LXP-D1211
Display	Display type	TFT color LCD			
	Color indication	24bit(16.7M)			
	Screen size	12.1"			
	Display resolution	1024x 768			
	Backlight	LED method, automatic On/Off support			
	Backlight lifetime	50,000 hour			
Touch	Touch panel	Capacitive touch			
	Operation mode	Bare hands, Glove, Waterproof			
	Sensitivity adjustment	10 steps adjustable for each mode			
	Function	Multi-touch, Zoom in/out, change screen			
Built-in Camera	Resolution	720p, 15fps(30FPS will be supported)			
	Support	○	○	-	-
XP-VLink		○	-	○	-
Buzzer		90dB, 9 steps adjustable			
USB[2)]	Device	USB 2.0, 1 channel			
	Host	USB 2.0, 1 channel			
Certification	Standard	CE, KC, UL, IP66			
Construction	Dimensions (mm)	320 x 261 x 44			
	Panel Cut (mm)	306 x 247			
	Weight (Kg)	3.0Kg			
Power	Power (V)	15.5Vdc			
	Power consumption (W)	9W		8W	

Note

(1) Built-in Camera

A built-in camera of the LXP series is supported max.720p. For stable using, we suggest 640p.

(2) XP-VLink(XGT-View Link)

XP-VLink means the ability to combine LXP Display Unit and Main Unit using XP-VLink I/F cable. In the case of models supporting XP-VLink, display unit and Main unit are combined according to the installation environment Or you can install it separately.

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2) Main unit

Item		LXP-M00D	LXP-M01D	LXP-M10D	LXP-M11D
Processor		1.6GHz, Quad core			
Memory	Drawing Memory	128Mbyte			
	Operation RAM	4GByte			
	Backup RAM	1Mbyte			
XP-VLink		○	-	○	-
RTC		Support, Battery CR2032(about 3years/25℃)			
Interface	HDMI	V2.0, 1 channel			
	Audio Out	3.5Φ, 40mW, 1 channel			
	Extended Interface	Support, 64GB extended memory			
Storage	SD	Max. 256GB(SDXC, SDHC)			
	USB host	USB 3.0, 2 channel			
Communication	LAN0	10Base-T/100Base-TX/1000Base-T Auto MDIX RJ-45			
	LAN1				
	COM1	RS-232C, RS-422/485, Isolated Baud rate: 9,600~115,200(Max. 5kbps) 9pin D-sub(Female)			
	COM2	RS-232C, RS-422/485, 5Vdc/250mA Power out Baud rate: 9,600~115,200(Max. 5kbps) 9pin D-sub(Female)			
	COM3	RS-485 Baud rate: 9,600~115,200(Max. 5kbps) 3pin Open connector			
Certification	Standard Certification	CE, KC, UL, IP20			
Structure	Dimension (mm)	220 x 147 x 51.3			
	Weight (Kg)	1.4kg			
Power	Power (V)	24Vdc			
	Power consumption (W)	7W			

(2) Special Type(Explosion-proof product)

1) Display Unit

Item		LXP-D1200	LXP-D1201	LXP-D1210	LXP-D1211
Display	Display type	TFT color LCD			
	Color indication	32bit color(16.7M)			
	Screen size	12.1"			
	Display resolution	1024x 768			
	Backlight	LED method, automatic On/Off support			
	Backlight lifetime	50,000 hour			
Touch	Touch panel	Capacitive touch			
	Operation mode	Bare hands, Glove, Waterproof			
	Sensitivity adjustment	10 steps adjustable for each mode			
	Function	Multi-touch, Zoom in/out, change screen			
Built-in Camera	Resolution	720p, 15fps(30FPS will be supported)			
	Support	○	○	-	-
XP-VLink		○	-	○	-
Buzzer		90dB, 9 steps adjustable			
USB	Device	USB 2.0, 1 channel			
	Host	USB 2.0, 1 channel			
Certification	Standard	CE, KC, UL, IP, IECEx, ATEX, CCC, KCs			
	Protection standard	Ex nA nC IIC T6 Gc, Ex tc IIIC T85℃ Dc IP 66			
Structure	Dimension (mm)	320 x 261 x 44			
	Panel cut (mm)	306 x 247			
	Weight (Kg)	3.0Kg			
Power	Power (V)	15.5Vdc			
	Power consumption (W)	9W		8W	
Specific conditions of use		1. The equipment presents a potential electrostatic hazard. Clean only with a damp cloth. 2. The equipment must be installed in accordance with EN 60079-14. 4. Do not connect or separate plugs and sockets while an explosive atmosphere is present 5. Avoid direct sunlight. 6. The USB hosts only must be used for maintenance function. 7. The equipment can be installed in an EX p purged enclosure which provides at least IP4X ingress protection rating. 8. The equipment shall be installed in an enclosure IP6X for marked tc and IP54 for marked nA. 9. The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1. 10. Plugs and sockets shall not be separated while an explosive atmosphere may be present. 11. The equipment presents a potential electrostatic hazard. The user shall therefore ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build-up of electrostatic charges. 12. The equipment shall be used always in a vertical position.			

	13. The equipment shall be supplied by an appropriately rated transient protective device that is set to a level not exceeding 140% of the peak rated voltage. 14. The equipment shall be installed so as to be protected from mechanical impact.

Note

(1) Built-in Camera

A built-in camera of the LXP series is supported max.720p. For stable using, we suggest 640p.

(2) XP-VLink(XGT-View Link)

XP-VLink means the ability to combine LXP Display Unit and Main Unit using XP-VLink I/F cable. In the case of models supporting XP-VLink, display unit and Main unit are combined according to the installation environment Or you can install it separately.

2) Main unit

Item		LXP-M00D	LXP-M01D	LXP-M10D	LXP-M11D
Processor		1.6GHz, Quad core			
Memory	Drawing memory	128Mbyte			
	Operation RAM	4GByte			
	Backup RAM	1Mbyte			
XP-VLink		○	-	○	-
RTC		Support, Battery CR2032(about 3years/25℃)			
Interface	HDMI	V2.0, 1 channel			
	Audio Out	3.5Φ, 40mW, 1 channel			
	Extended interface	Support, 64GB extended memory			
Storage	SD	Max. 256GB(SDXC, SDHC)			
	USB host	USB 3.0, 2 channel[1)]			
Communication	LAN0	10Base-T/100Base-TX/1000Base-T Auto MDIX RJ-45			
	LAN1				
	COM1	RS-232C, RS-422/485, Isolated Baud rate: 9,600~115,200(Max. 5kbps) 9pin D-sub(Female)			
	COM2	RS-232C, RS-422/485, 5Vdc/250mA Power out Baud rate: 9,600~115,200(Max. 5kbps) 9pin D-sub(Female)			
	COM3	RS-485 Baud rate: 9,600~115,200(Max. 5kbps) 3pin Open connector			
Certification	Standard Certification	CE, KC, UL, IP, IECEx, ATEX, CCC, KCs			
	Protection standard	Ex nA nC IIC T6 Gc, Ex tc IIIC T85℃ Dc IP 66			
Structure	Dimension (mm)	220 x 147 x 51.3			
	Weight (Kg)	1.4kg			
Power	Power (V)	24Vdc			
	Power consumption (W)	7W			
Specific conditions of use		1. The equipment presents a potential electrostatic hazard. Clean only with a damp cloth. 2. The equipment must be installed in accordance with EN 60079-14. 4. Do not connect or separate plugs and sockets while an explosive atmosphere is present 5. Avoid direct sunlight. 6. The USB hosts only must be used for maintenance function. 7. The equipment can be installed in an EX p purged enclosure which provides at least IP4X ingress protection rating. 8. The equipment shall be installed in an enclosure IP6X for marked tc and IP54 for marked nA.			

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	9. The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1. 10. Plugs and sockets shall not be separated while an explosive atmosphere may be present. 11. The equipment presents a potential electrostatic hazard. The user shall therefore ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build-up of electrostatic charges. 12. The equipment shall be used always in a vertical position. 13. The equipment shall be supplied by an appropriately rated transient protective device that is set to a level not exceeding 140% of the peak rated voltage. 14. The equipment shall be installed so as to be protected from mechanical impact.

Notes(Common)

(1) Caution in power connection - With AC power applied to DC power device, it may cause product damage or fire. Please pay a special attention to connection.
(2) PE Connection - For the device PE, please use PE terminal.
(3) Battery discharge-prevention DIP switch - In order to prevent the battery discharge, turn off the DIP switch No.4. To use backup function, please turn on DIP switch No. 4.
(4) Battery Operation and Life - Battery is used for RTC (date/time) when the power of device is off. Battery is not consumed with power applied.
(5) LCD Backlight Replacement - Please replace LCD if you want to replace LCD backlight.
(6) Protection standard - XGT Panel is designed by IP66 Standard in front parts. Ingress Protection (IP) is based on the IEC 60529 Standard for degrees of protection provided by enclosures. But XGT Panel does not guarantee from all installation environment. When installing panels, make sure that dust and moisture are not brought in. For more details on installation, See Chapter 4. Installation and Wiring.
- It complies with the following specifications. IEC 60079-0:2011
EN 60079-0:2011
IEC 60079-15:2010
EN 60079-15:2010
IEC 60079-31:2013
EN 60079-31:2013

(7) USB Maximum Allowable Current
The maximum allowable current for each channel of USB Host of LXP series is 500mA. When connecting a device that requires a current consumption of 500mA or more, a USB device capable of supplying external power must be used for normal operation.
(8) Extended camera support
For USB Camera, only the USB Host channel of the main unit supports it for operational stability.

2.3 Cable Standards

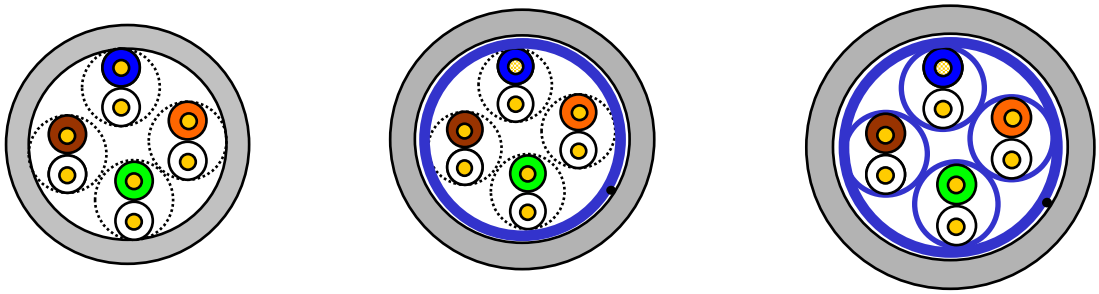
2.3.1 UTP Cable

UTP cables are categorized into two types with the following standards.

① Shield type: Three types (UTP, FTP, STP)
② Seven types of frequency bands used 7 types (Cat.1-7)

(1) Cable types (shields)

Type	Details	Purpose
UTP(or U.UTP)	Unshielded cable for fast signals	Max 200 MHz Audio + Data + Low video signals
FTP(or S.UTP)	Cable shielding cable cores only	Max 100 MHz Considers EMI and electric stabilization Audio + Data + Low video signals
STP(or S.STP)	Double layer shielding by shielding each pair and cable shielding cable cores only	Max 500 MHz Audio + Data + Video signals For replacing 75Ω coaxial cables



UTP FTP STP

Note

(1) Cable type
UTP : Unshielded Twisted Paired Copper Cable
FTP : (Overall) Foiled Twisted Paired Copper Cable
STP : (Overall) Shielded(and Shielded Individually Pair)Twisted Paired Copper Cable

(2) Patch Cable(or Patch Cord)
For the purpose of improving the flexibility of the UTP 4-pair cables, sometimes a wired conductor is used instead of a solid conductor. The target standards and materials used are Un-coated AWG 24 (7/0203A). In other words, the small line diameter is 0.203 mm, the small line is standardized to 1 + 6 structure, and the material is the annealing copper wire.

(3) For the PLC Ethernet communication cable use of the S.STP cable is recommended. If the S.STP cable cannot be used due to the environmental conditions, it may result in communication abnormalities and noise in more than one module

(2) Type per used frequency

Type	Used frequency (MHz)	Transmission speed (Mbps)	Purpose
Category 1	Audio frequency	1	Telephone network (2Pair)
Category 2	4	4	Multi pair communications cable
Category 3	16	16	Telephone network + Computer network
Category 4	20	20	1)Speed up the computer network 2) Low-loss communications cable
Category 5 and Enhanced Category 5	100	1,000	1) Digital telephone network + Computer network 2) Low-loss, broadband cable
Category 6	250	10,000	1) Massive data communication 2) Low-loss, broadband cable
Category 7	600	10,000	1) Massive data communication 2) Low-loss, broadband and high reliability cable

Notes

(1) The categories that are commercially available in Korea and globally are categories 3, 5, En-Cat.5 and CAD.6. Category 4 is now defunct following the category 5 appearances, and category 7 is a STP structure that is in the development phase worldwide

(3) Example of category 5, UTP (CTP-LAN5)

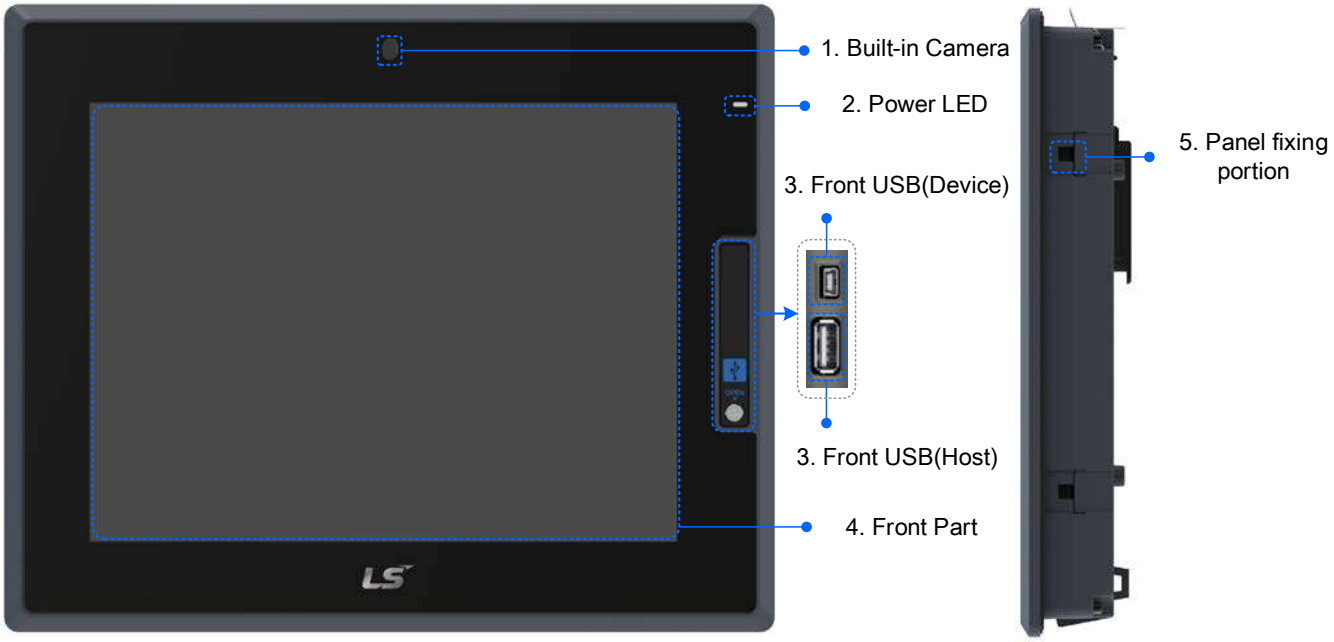
Item	Unit		Value
Conductor resistance (Max)	Ω/km		93.5
Insulation resistance (Min)	MΩ·km		2,500
Withstand voltage	V/Min		AC 500
Characteristic impedance	Ω(1~100MHz)		100 ± 15
Attenuation	dB/100m or less	10MHz	6.5
		16MHz	8.2
		20MHz	9.3
Near-end crosstalk attenuation	dB/100m or less	10MHz	47
		16MHz	44
		20MHz	42

Chapter 3 System Configuration

XGT Describes the characteristics of XGT Panel and system configuration

3.1 Part Names

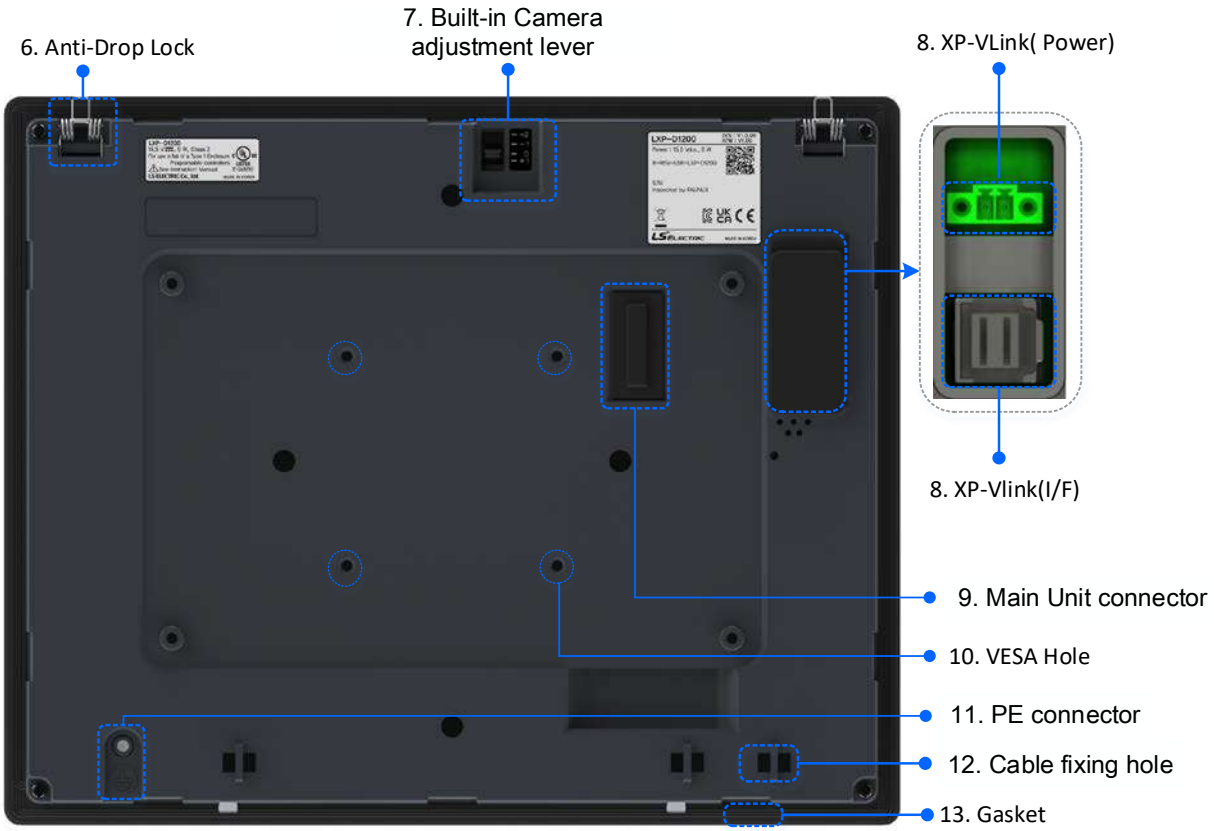
3.1.1 Display unit



No	Name	Function
1	Built-in Camera	Real-time video display and recording
2	Power LED	Display the power status of the device
3	Front USB*1)	1) USB 2.0 Host 1 channel 2) USB 2.0 Device channel
4	Front Part	1) capacitive touch panel : user touch input 2) LCD: screen display
5	Panel fixing portion	Fixing XGT Panel to panel with Bracket

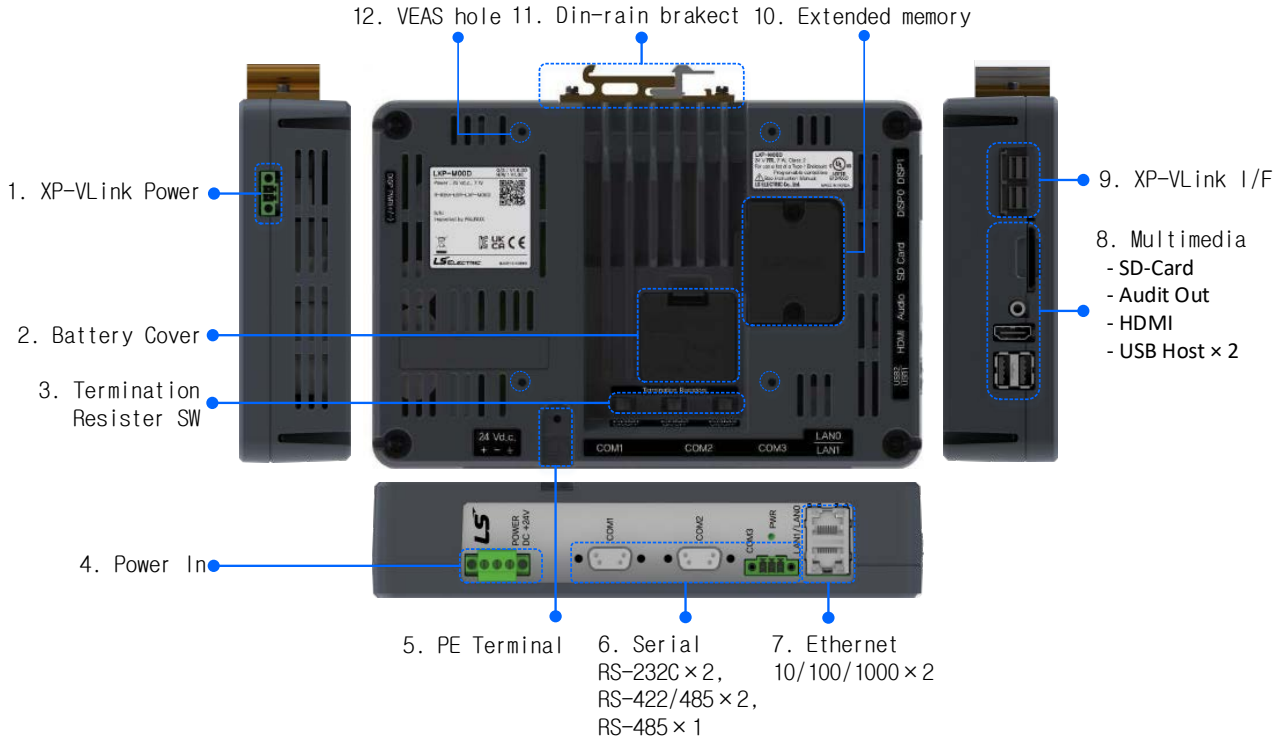
Note

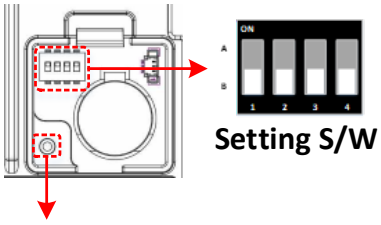
*1) The USB 2.0 Device 1 channel is used for maintenance purposes for downloading and uploading projects.



No	Name	Function
6	Anti-Drop Lock	Lock for fall prevention when installing and disassembling the product
7	Built-in Camera adjustment lever	Built-in camera angle adjustment lever
8	XP-VLink	1. Power: XP-VLink Power input 2. I/F: XP-VLink I/F cable connection
9	Main Unit Connector	Display + Main Unit I/F Connector
10	VESA Hole	hole for VESA fastening
11	PE connector	PE connection
12	Cable fixing hole	Fixing Cables
13	Gasket	Protecting from water and dust

3.1.2 Main unit



No	Name	Function
1	XP-VLink Power	15.5V XP-VLink Power Output
2	Battery Cover Reset S/W Backup Battery Setting S/W	Setting S/W, Reset S/W and backup battery can be checked when the battery cover is removed  Setting S/W Reset S/W <Setting S/W derail>

1/2	A setting	Not used
	B setting	Not used
3	A setting	O/S Download
	B setting	NAND FLASH booting(default)
4	A setting	Backup Battery On
	B setting	Backup Battery Off(default)

<Reset S/W>
A switch for system reset. Pressing the switch resets the system.

No	Name	Function
3	Termination Resistance S/W	COM1, COM2, COM3 Termination Resistance ON/OFF Switch
4	Power Input	Main Unit 24Vdc Power input terminal
5	PE Connector	PE Connection
6	Serial	1. COM1: RS-232C x 1, RS422/485 x 1 2. COM2: RS-232C x 1, RS422/485 x 1 3. COM3: RS485 x 1
7	Ethernet	10Base-T/100Base-TX/1000Base-T x 2
8	Multimedia	1.SD Card: Maximum 128GB support 2.Audio Out: Stereo Audio Output: Ø3.5mm RCA 3.HDMI: HDMI screen output (Support for clone/extend mode) 4.USB Host: USB Host 3.0 x 2
9	XP-VLink	I/F Line when XP-VLink is applied
10	Extended Memory	Extended Memory
11	DIN rail Bracket	Connector for DIN rail fastening when main unit is connected in XP-VLink method
12	VESA Hole	hole for VESA fastening

Notes

(1) The surface of the touch panel must be kept clean at all times. -Foreign objects (water, oil, etc.) on the touch panel may cause malfunction.
(2) Touching the front of the touch panel may cause malfunction. -Be careful that conductive objects do not touch the touch panel.
(3) The switch No. 1/2 of the setting switch must be set in the same direction. -If switches 1 and 2 are set in different directions, communication problems may occur.
(4) The RCA plug body of Audio-out must be Ø 8.0mm or less.
(5) If the length of the HDMI cable exceeds 5 m or an extension gender is used, there may be problems with the screen output. -If there is a problem with the screen output, please use the HDMI Repeater.
(6) 1000Base-T may delay the initial communication connection after booting. -If you need a fast communication connection, use the 10Base-T/100Base-TX Ethernet terminal.
(7) Refer to the communication manual for details on communication connection.
(8) In order to use RTC(Date/Time) normally, it is necessary to set the date and time after the backup battery on setting at first. For setting method, refer to 5.1.3 Date/Time Adjustment.
(9) Please refer to Chapter 10 for installation details.
(10) For explosion-proof products -Front USB can only be used as a maintenance function
(11) Extended memory and XP-VLink cable sold separately.

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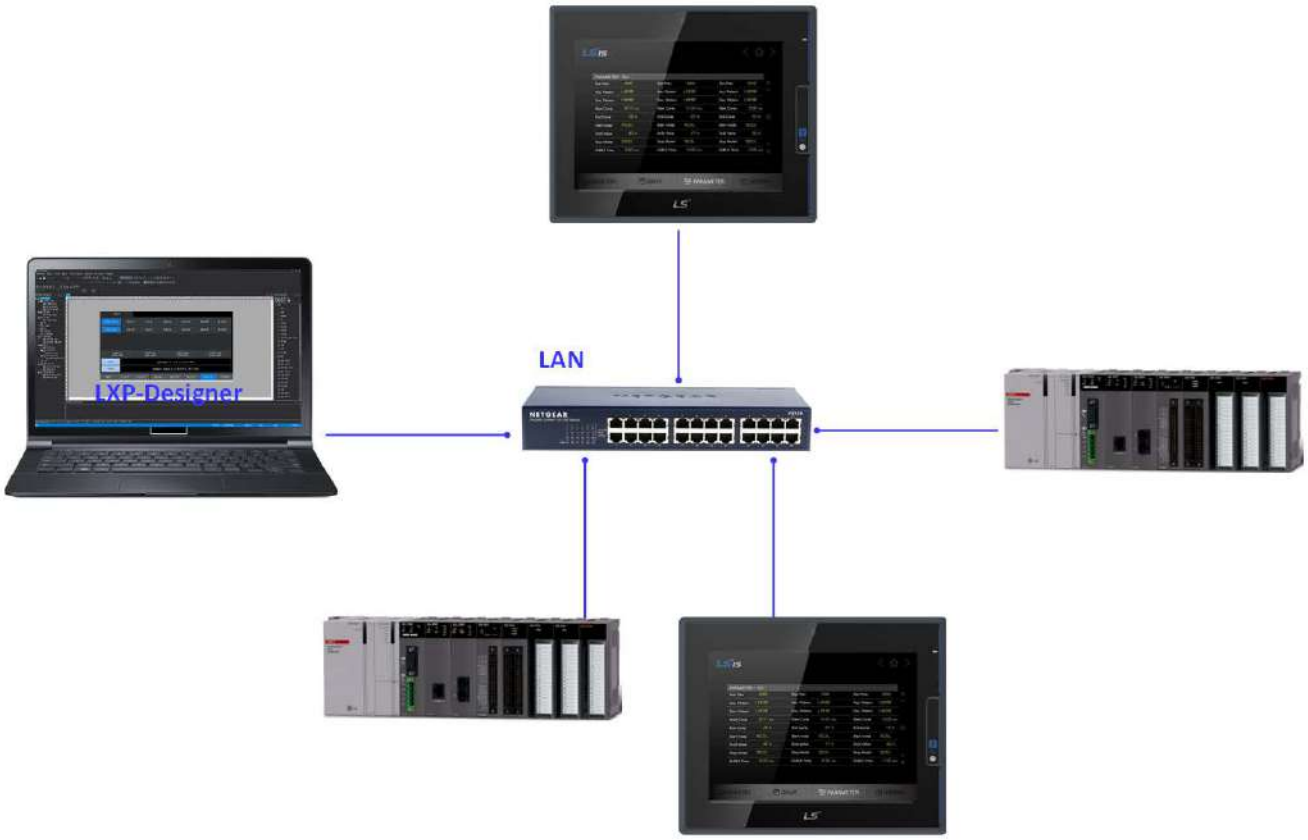
3.2 System Configuration

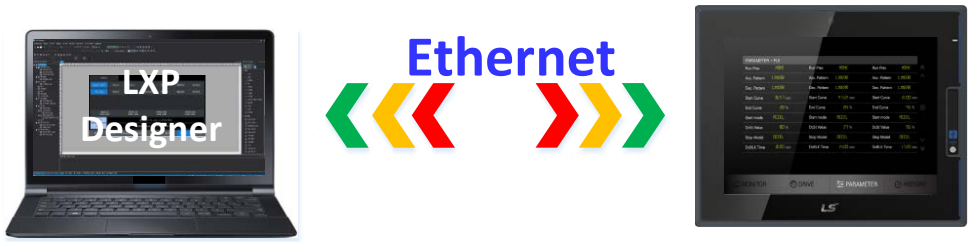
3.2.1 Project Transfer

To use XGT Panel, you must create project data in LXP-Designer and transfer it to XGT Panel.

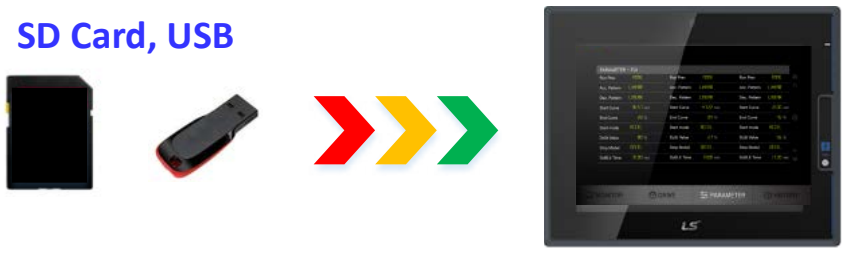
With Ethernet, project data can be transferred quickly. If the LAN environment is established as shown below, you can use it more easily and effectively.



1:1 connection is also supported in case LAN environment is not established.



If project data can not be transferred using communication, you can transfer data using USB storage device or SD card. Please refer to Chapter 5 and LXP-Designer User's Guide for more information.



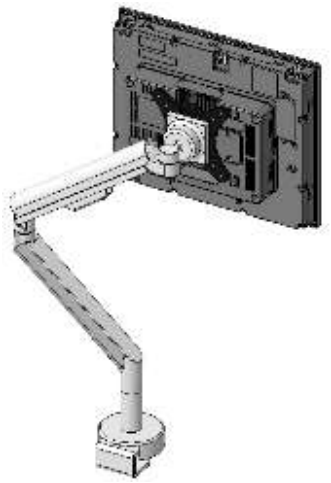
Notes

(1) Refer to the communication manual for how to make the Ethernet cable
(2) Refer to LXP-Designer manual for project transfer method

3.2.2 Combined Configuration

The main unit can be combined with the display unit for installation on panels and VESA mounts

.



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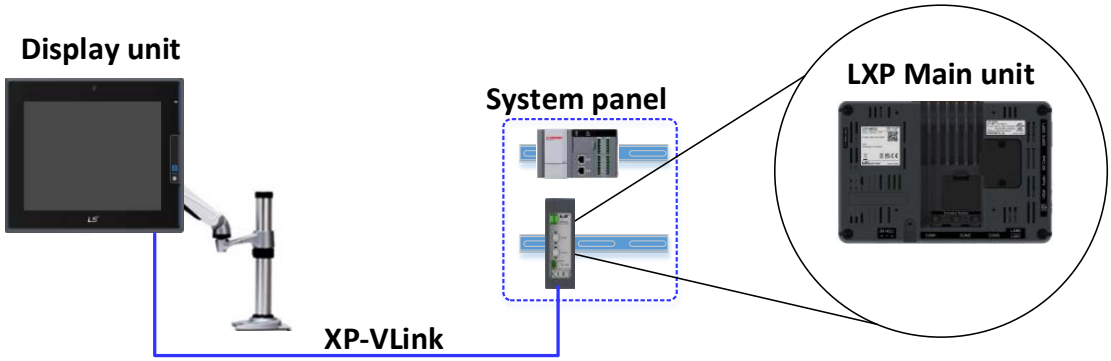
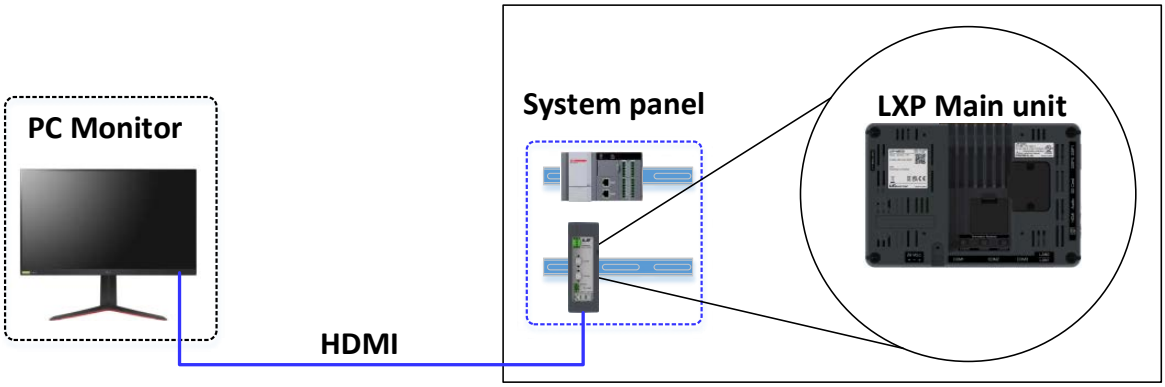
3.2.3 XP-VLink Service

The display unit and the main unit can be connected by XP-VLink and installed separately. XP-VLink requires a cable for XP-VLink I/F and supports up to 3m and 5m. You can use the same functionality as the combined when configuring a detachable configuration



3.2.4 Main unit standalone configuration

Only the main unit can be installed and used independently without connecting the display unit. If screen monitoring is required, the monitor can be connected and used via HDMI.



Notes

(1) If the display unit needs to be replaced due to an abnormality while driving, it can only be changed to a unit of the same screen size. If you change to a different screen size unit, you must download a new project. Refer to the LXP-Designer User's Guide for instructions on how to send a project.

Chapter 4 Installation and Wiring

4.1 Installation

4.1.1 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 IP66 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) If the XGT Panel is exposed to low or severe temperature changes, dew may may occur between the front panel and LCD screen. In this case, malfunction or damage of the product may occur, so wait until the surface temperature of the XGT Panel is close to the ambient temperature before turning on the power.
- (f) This machine should be installed within 0~50°C, otherwise the screen may be changed or cause malfunction.
- (g) This machine should be installed within 10~85% relative-humidity. Moisture by rapid temperature change can cause malfunction and damage.
- (h) 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.

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Notes

(1) Waterproof and dustproof standard

(a) IP66 Standards

1) The protection standards of XGT Panel have been designed to meet the IP66 test conditions, in accordance with the degrees of protection provided by enclosures of IEC60529. As this machine installed at the panel, it is not guaranteed with all installation environment even though its protection standards for the front parts are satisfied.

2) IP66 rating guarantees the enclosure is dust proof (6) and protected against jets of water (6).

3) IP20 rating guarantees protection from solid foreign objects of above 12mm diameter proof (2), but it does not guarantee protection from water ingress.

Elemento *Element*	Cifre o lettere *Numerals or letters*	Significato per la protezione dell'apparecchiatura *Meaning for the protection of equipment*	Significato per la protezione delle persone *Meaning for the protection of persons*	Rif. *Ref.*
Lettere caratteristiche *Code letters*	IP	—	—	—
Prima cifra caratteristica *First characteristic numeral*	0 1 2 3 4 5 6	Contro la penetrazione di corpi solidi estranei: *Against ingress of solid foreign objects:* (non protetto)_*(non-protected)* ≥ 50 mm di diametro_*≥ 50 mm diameter* ≥ 12,5 mm di diametro_*≥ 12,5 mm diameter* ≥ 2,5 mm di diametro_*≥ 2,5 mm diameter* ≥ 1,0 mm di diametro_*≥ 1,0 mm diameter* protetto contro la polvere_*dust-protected* totalmente protetto contro la polvere_*dust-tight*	Contro l'accesso a parti pericolose con: *Against access to hazardous parts with:* (non protetto)_*(non-protected)* dorso della mano_*back of hand* dito_*finger* attrezzo_*tool* filo_*wire* filo_*wire* filo_*wire*	Art. 5 *Cl. 5*
Seconda cifra caratteristica *Second characteristic numeral*	0 1 2 3 4 5 6 7 8	Contro la penetrazione di acqua con effetti dannosi: *Against ingress of water harmful effects:* (non protetto)_*(non-protected)* caduta verticale_*vertically dripping* caduta di gocce d'acqua (inclinazione 15°)_*dripping (15° tilted)* pioggia_*spraying* spruzzi d'acqua_*splashing* getti d'acqua_*jetting* getti potenti_*powerful jetting* immersione temporanea_*temporary immersion* immersione continua_*continuous immersion*	—	Art. 6 *Cl. 6*
Lettera addizionale (opzionale) *Additional letter (optional)*	A B C D	—	Contro l'accesso a parti pericolose con: *Against access to hazardous parts with:* dorso della mano_*back of hand* dito_*finger* attrezzo_*tool* filo_*wire*	Art. 7 *Cl. 7*
Lettera supplementare (opzionale) *Supplementary letter (optional)*	H M S W	Informazioni supplementari relative a: *Supplementary information specific to:* Apparecchiatura ad alta tensione *High-voltage apparatus* Prova con acqua con apparecchiatura in moto *Motion during water test* Prova con acqua con apparecchiatura non in moto *Stationary during water test* Condizioni atmosferiche *Weather conditions*	—	Art. 8 *Cl. 8*

(KS C IEC 60529: 2006 standard)

(b) Notice

1) In the environment where the protection grade of XGT Panel is exceeded or not satisfied, the damage of the device or malfunction can occur due to the failure of protecting the product.

2) Since the protection grade of XGT Panel is the water-proof/dust-proof standards, it cannot be protected from oil, corrosive gas and metal particles.

3) In case when Gasket is damaged by chemicals and continuous vibration, its water-proof/dust-proof effect can be weakened.

4) In case when installing the panel, make sure that dust and water are not brought in panels.

4.1.2 Precautions before handling

This section describes the precautions for handling the XGT Panel from opening to installation.

- Do not drop or subject it to strong impacts.
- Do not open the product case or take any action. In such cases, we are not responsible for the product.
- When wiring, be careful not to let foreign substances such as wiring residue into the XGT Panel.
- Be sure to apply power after installation of the product is complete.

4.1.3 Precautions for panel installation

- Please consider the user's touch operating convenience and screen visibility.
- The screen may not be clearly visible if it is outside the display angles below. It is recommended to install the product considering the angle of the display

Type	Angle(Right and left)	Up	Down
LXP-D12xx	80 deg.	80 deg.	80 deg.

- When receiving the product, be sure to remove the film attached to the front sheet after installing it on the panel.

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4.1.3.1 Panel installation

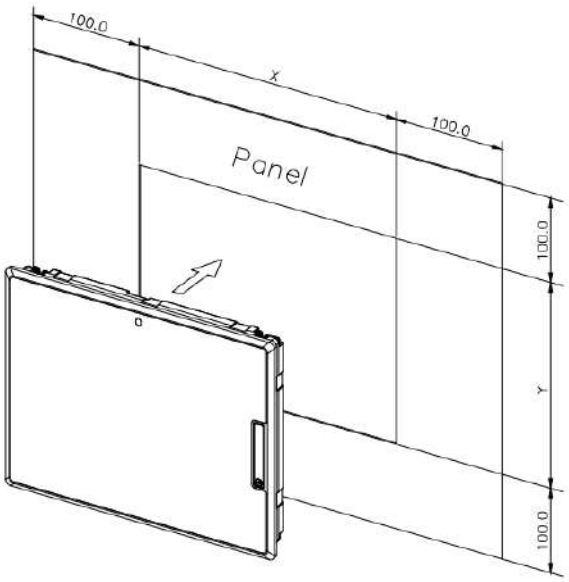
Describes how to install the XGT Panel on the panel and notes.

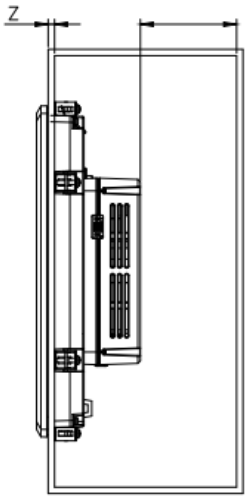
(1) Panel cut

- Before installing the XGT Panel on the panel, it must be manufactured on the panel as shown in the table below.

Unit : [mm]

Type	X		Y		Z
LXP-D12xx	306	+1 - 0	247	+1 - 0	1.6 ~ 6

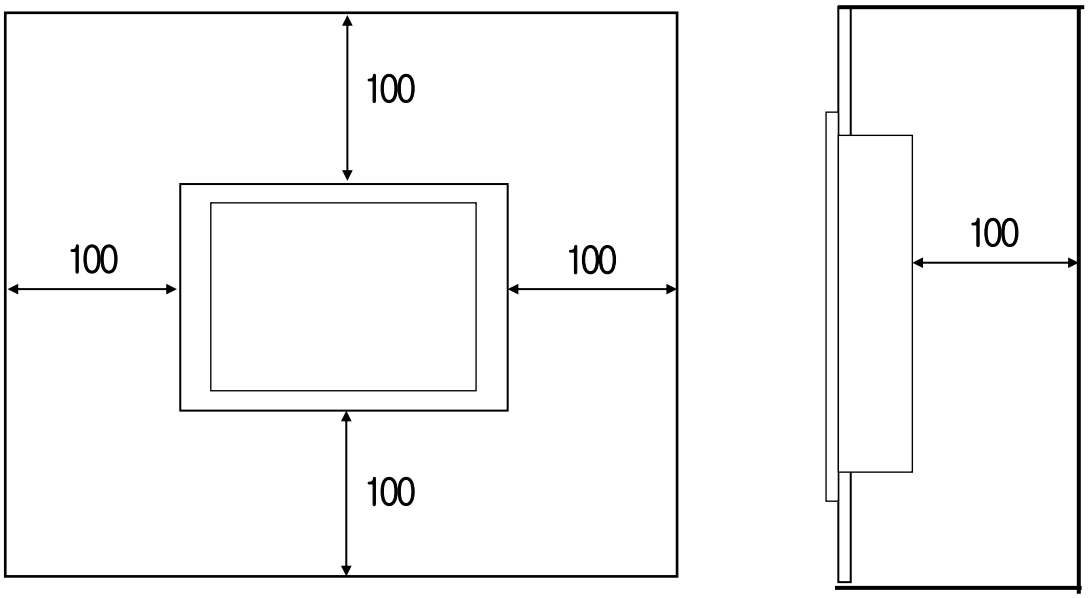




(2) Panel installation

- When mounting the XGT Panel on the panel, please install 100mm or more in each direction.

Unit: [mm]



Notes

(1) In order to be less affected by electromagnetic waves (radiation noise) or heat generated by other control devices, Required.
(2) Install it considering the wiring of power and communication cables.
(3) When the panel cut dimensions are outside the reference tolerance (0 ~ + 1mm) when making the panel, the gap between the gasket and the panel. The contact area may be reduced, and the waterproof and dustproof effect may be weakened.
(4) When mounting the product on the panel, use gasket for waterproof and dustproof. The XGT Panel basically has a waterproof and dustproof gasket is equipped.
(5) If the surface of the panel on which the XGT Panel is mounted is uneven, there is a gap between the XGT Panel and the panel, or dust may penetrate. Particularly, depending on the material (steel, aluminum, acrylic, etc.) of the panel, This may require installation environment review. Also check that the gasket and panel are in close contact. It is absolutely necessary.
(6) If the condition of the gasket is contaminated or damaged due to deterioration at the time of installation or after a certain period of use, the waterproof and dustproof effect care should be taken because it can be significantly weakened, and if a gasket needs to be replaced, contact your nearest dealer or service. Please contact the center.
(7) In case of explosion-proof equipment, it should be installed in the environment with pollution degree 2 or less according to KS IEC 60664-1.
(8) Install the front of the explosion-proof product in a place protected from the inflow of liquid in order to maintain the explosion-proof performance after installation in accordance with the requirements of the obligatory safety certificate notice of the protection device (Ministry of Employment and Labor Notice 2013-54)

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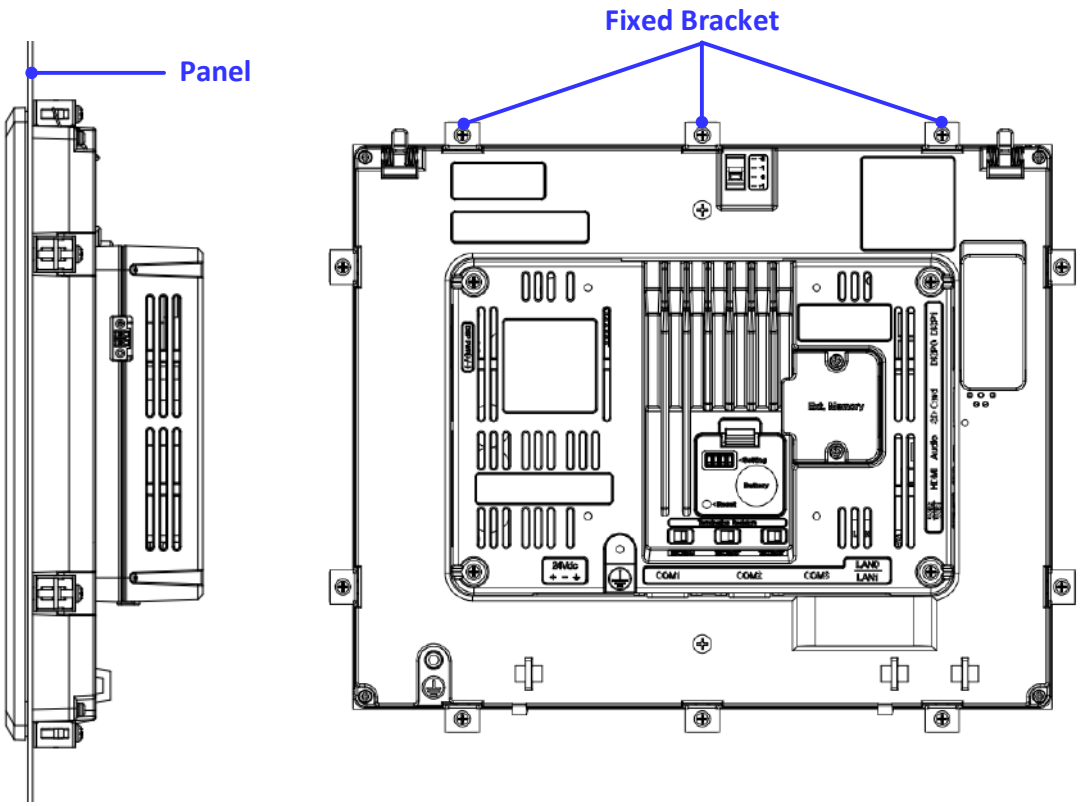
(3) Fixing

- For the XGT Panel using the brackets on the panels as shown below.
  (The bracket is included in the product.)



Notes

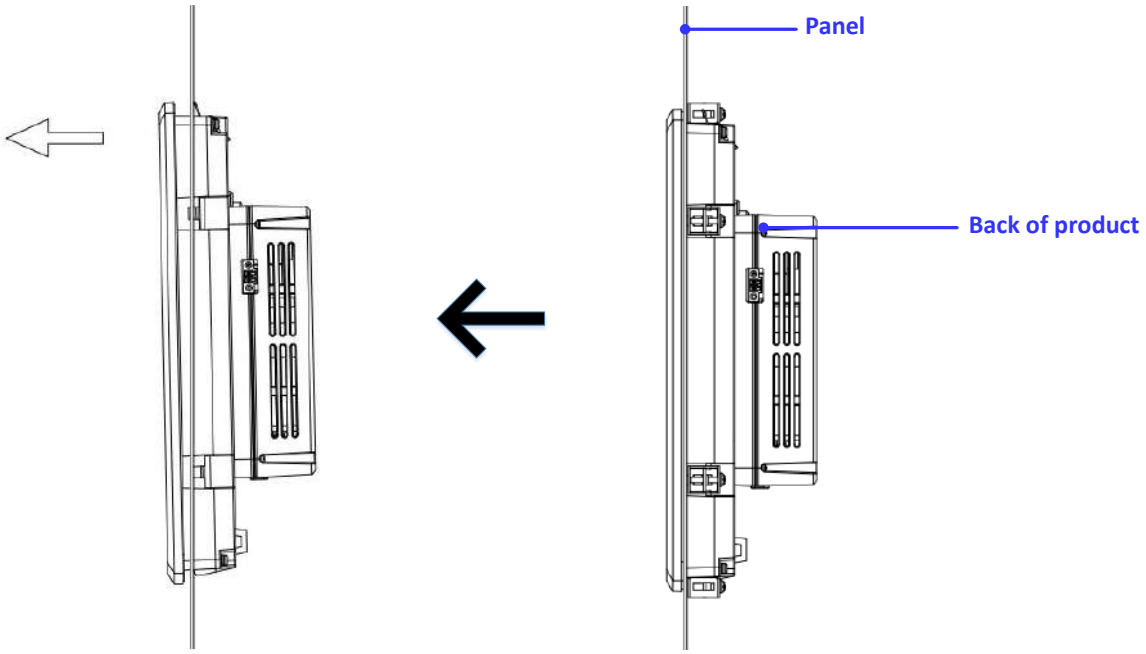
(1) During installation, XGT Panel should be closely contacted to the panel not to have any gap. In the environment requiring water-proof/dust-proof effect, install and fix a bracket on a slope.

(2) The bracket should be fixed symmetrically(Up-Down, Left-Right). In case when it is not fixed symmetrically, there could be a gap between the panel and XGT Panel.

(3) When fixing the bracket, it should be installed perpendicularly to the panel, and the required bracket screw torque is 6.7kgf · cm. Depending on the material type of the panel, the torque value can be different. The standard screw torque for each bolt size is followed. If it is fixed with the power more than the required screw torque, the touch malfunction or weakening of water-proof/dust-proof can happen due to the deformation of XGT Panel.

(4) Product Separation

- Loosen the fixing bracket screw and remove the bracket from the XGT Panel.
- Press the Anti-drop lock as shown below and then slowly push it forward to remove it from the panel.



Notes

(1) Be careful not to drop the product when removing the device from the panel.

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4.1.3.2 Panel installation on VESA mount

XGT Describes how to install XGT Panel on VESA mount and precautions.

(1) VESA mount specifications

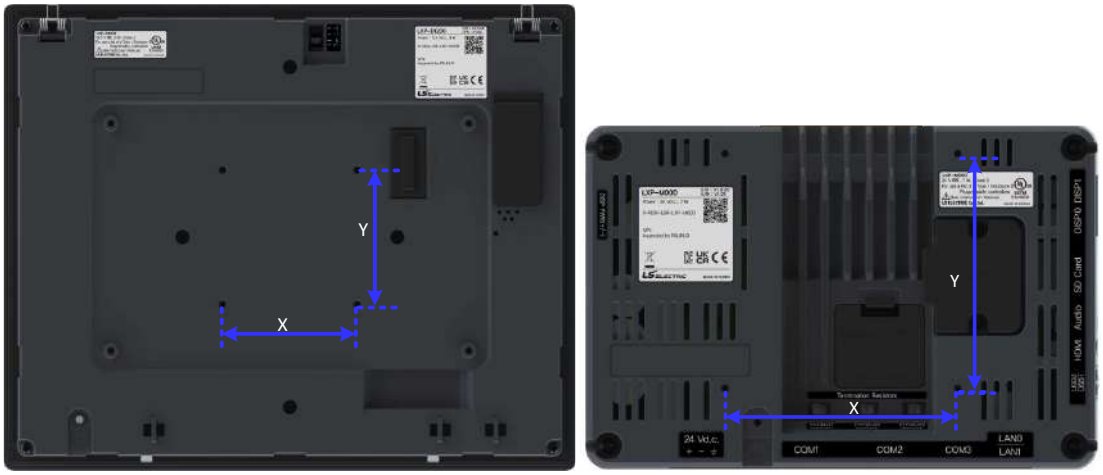
- Refer to the table below for VESA mount screw hole sizes.

unit: [mm]

Type	X	Y	note
LXP-D12xx	75	75	
LXP-MxxD	100	100	

(2) Fixing

- Refer to the figure below for VESA mount screw hole locations.
- If it interferes with the VESA mount bracket, use a spacer



(3) Product separation

- Remove the screw, being careful not to drop the product.

Notes

Water, dust, and explosion-proof ratings do not apply when installing VESA mounts.

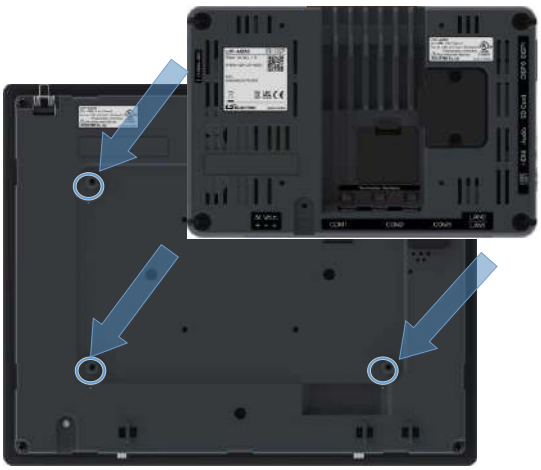
4.1.4 Precautions for the main unit

- For products that can be installed separately. (LXP-Mx0D, for detailed product model names, refer to 1.4 Model Name Assignment Criteria)

4.1.4.1 Installation on the display unit

(1) Fixing

- Refer to the figure below for fixing screw hole positions.
- When installing on the display unit, be sure to remove the detachable cable before use.

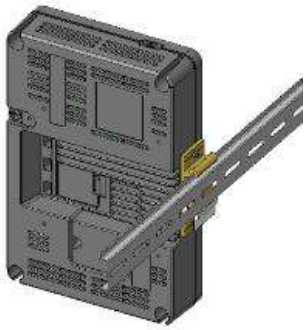


4.1.4.2 Installation on DIN rail

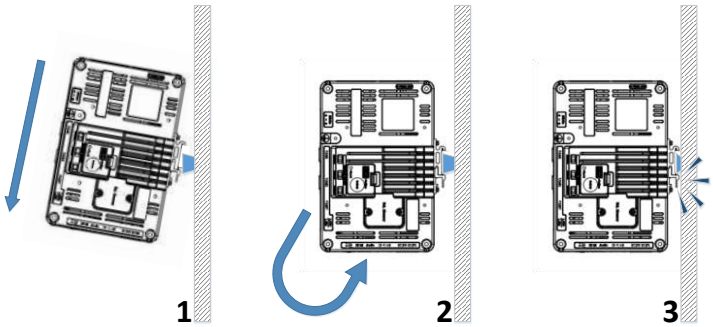
Describes how to install on a DIN rail and precautions.

(1) DIN rail bracket mounting

- The mountable DIN rail is 35mm .
- Mount the bracket in the DIN rail bracket fixing hole in the direction as shown in the figure below.



< Example of DIN-rail installation>



< DIN-rail installation method>

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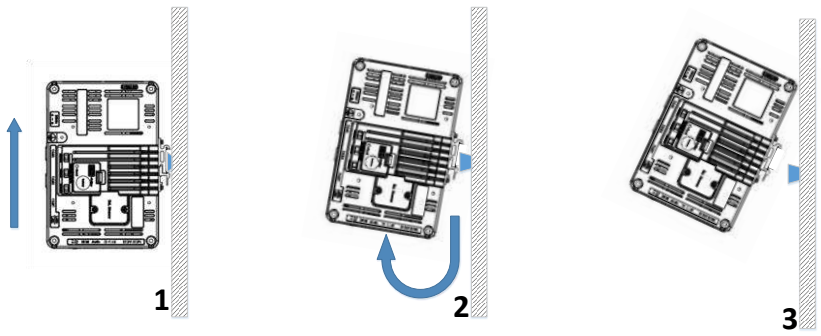
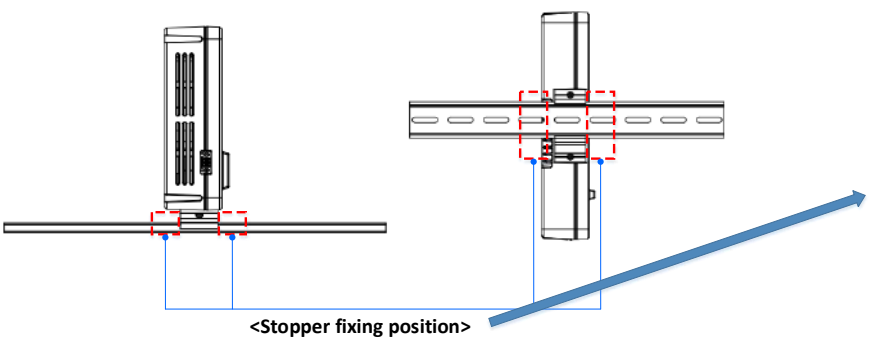
• DIN rail, lift the product slightly upwards and remove from the bottom.



< How to remove DIN rail>

• Mounting on a DIN rail, the DIN rail may be deformed, so tighten the DIN rail fixing bolt at the product installation location
• DIN rail stopper Use to fix the product.



<Stopper example>

Notes

(1) If the DIN rail bracket is installed in the opposite direction, problems such as shortening the life of the product may occur.

4.2 Wiring

Describes the wiring matters when installing the XGT Panel.

4.2.1 Power Wiring

XGT Panel is divided into DC (DC) product.

Power	Product Name
DC 24V	LXP-MxxD

⚠ Caution

- ► Connecting AC power to a device that uses DC power may cause product damage or fire. Be careful of connection.
- ► 'XXD' is a product using DC 24V and 'XXA' is a product using AC100-240. Be sure to check the polarity of the back of the product before use.
- ► The equipment shall be installed in an enclosure which maintains an ingress protection rating protection rating of at least IP64 and meets the enclosure requirements of IEC 60079-0 and IEC 60079-15, IEC 60079-31.
- ► Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- ► The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.
- ► Plugs and sockets shall not be separated while an explosive atmosphere may be present.
- ► The equipment presents a potential electrostatic hazard. Clean only with a damp cloth.
- ► Install in a vertical direction only.

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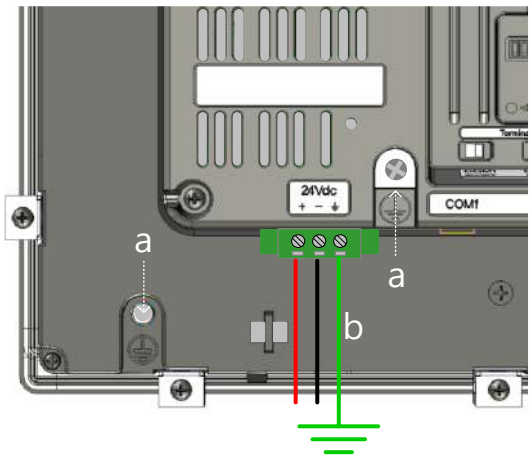
Use the following specifications for the power cable.

Type	Cable specification (Unit: ㎟)	Wire Type	Thermal Resistance	Screw Torque
Power and protection ground	1.5(AWG16) ~ 2.5(AWG12)	Copper	60℃	0.51N•m

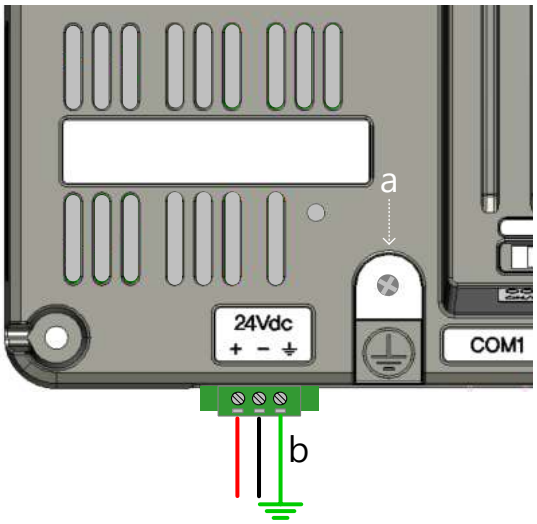
Notes

(1) For installations where there is voltage drop, it is recommended to use stranded wire with a cross sectional area greater than 2 ㎟.
(2) It is recommended that cable connections are twisted and secure. Short cable runs are also recommended between the point of supply and the XGT panel.
(3) For safety reasons it is recommended that you use color coded outer sheaths on the conductors to aid safe terminations.

Power connection is as shown below.



<Display Unit + Main Unit>

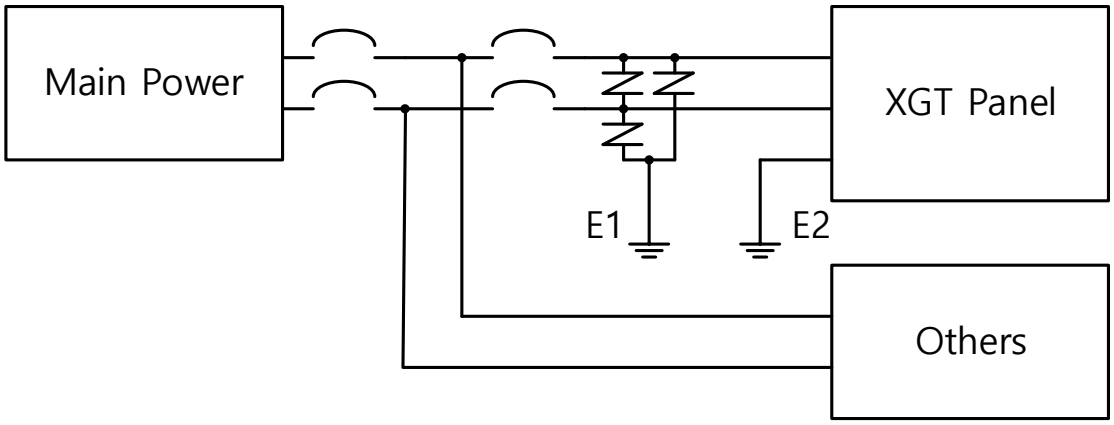


< Main Unit Alone>

Notes

(1) When the power fluctuation is larger than the specified value range, use a constant voltage transformer.
(2) When there is a lot of noise in the power supply, use an insulation transformer.
(3) Momentary power failure for stable data backup when power on / off. Please use.
(4)“a”is external earth, “b”is internal earth.

For XGT Panel power supply, I / O devices and power devices, separate the power supply system as shown below.
Use the surge absorber as shown in the figure below to prevent surge such as lightning.



Notes

(1) Do not bring the power line of the XGT Panel close to the main circuit (high voltage, high current) line or I / O signal line. Possible 100mm Install at an interval of more than two.
(2) Separate grounding (E2) of the XGT Panel of ground surge absorber (E1).
(3) Select the surge absorber so that the surge absorber does not exceed the maximum allowable voltage even when the power supply voltage rises to a maximum please give it to me.

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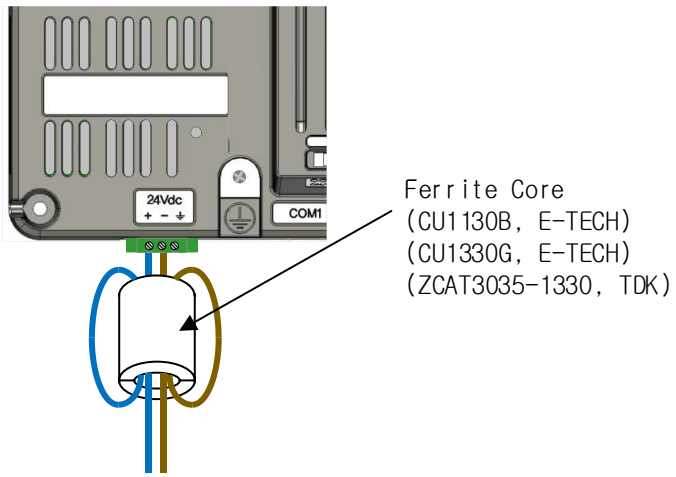
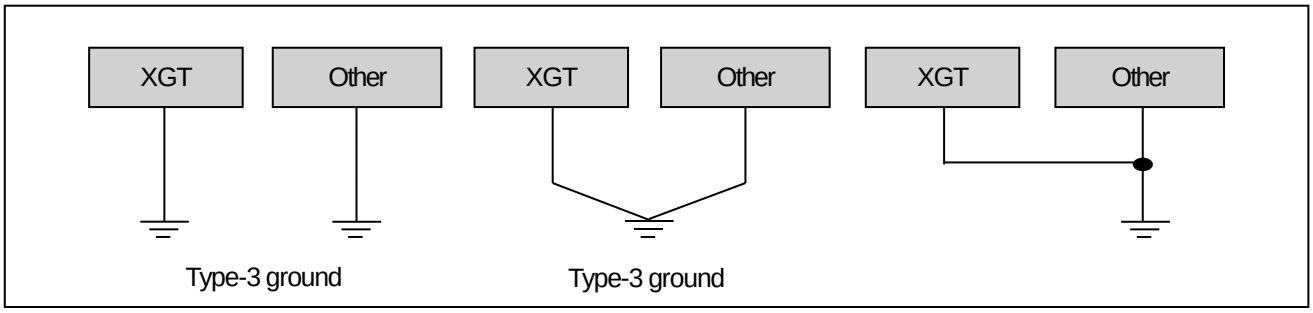
When there is concern about noise penetration, use an insulation shield transformer or a noise filter.
Be sure to twist the wiring of the input power supply as short as possible and do not let the wiring of the shielding transformer or noise filter pass through the duct.
When using a magnetic contactor (MC) for AC / DC, it is recommended to use Ferrite Core at the power input terminal.

ex) Apply a ferrite core to the power terminal as shown in the figure.



4.2.2 Ground Wiring

(1) This XGT Panel has enough noise countermeasures, so it can be used without grounding except when there is a lot of noise. However, when grounding, please refer to the following.
(2) Grounding should be done by dedicated grounding as much as possible.
Grounding works are classified as class 3 grounding (grounding resistance 100 ΩOr less).
(3) When dedicated grounding is not possible, use common ground as shown in Fig



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

(4) Ground wire is 2 mm2 or more. If possible, place the grounding point near the XGT Panel to shorten the length of the ground wire.

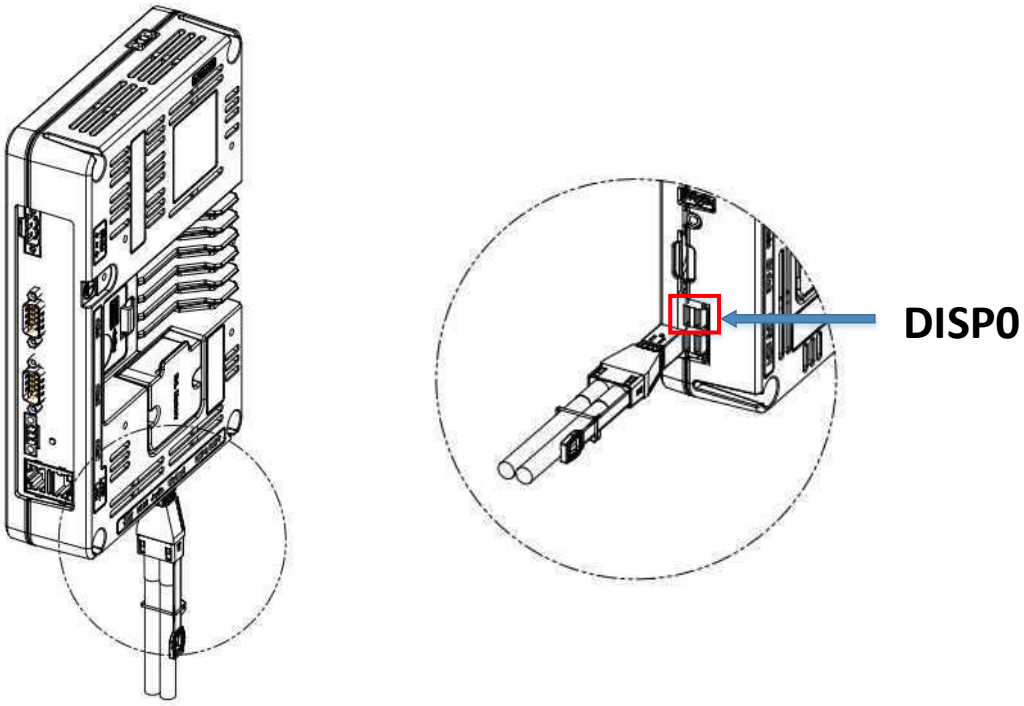
Notes

If the grounding condition is bad or connected as in (C), the XGT Panel may malfunction or communication failure may occur. Be sure to check grounding.

4.2.3 XP-VLink connection wiring

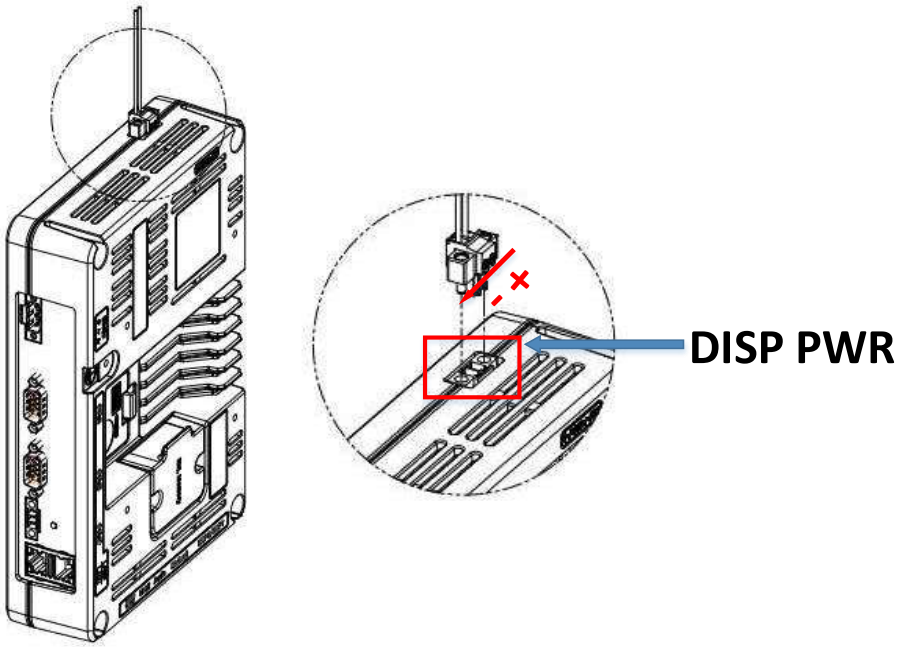
The display and main unit wiring methods and precautions when installing XP-VLink .

(1) Connect LXP-OCxx to DISP0 of Main Unit.



(2) DISP of Main Unit Connect the power line to be supplied to the Display Unit with the connector provided on the PWR (+/-).

*** Main Unit DISP PWR output 15.5 V**



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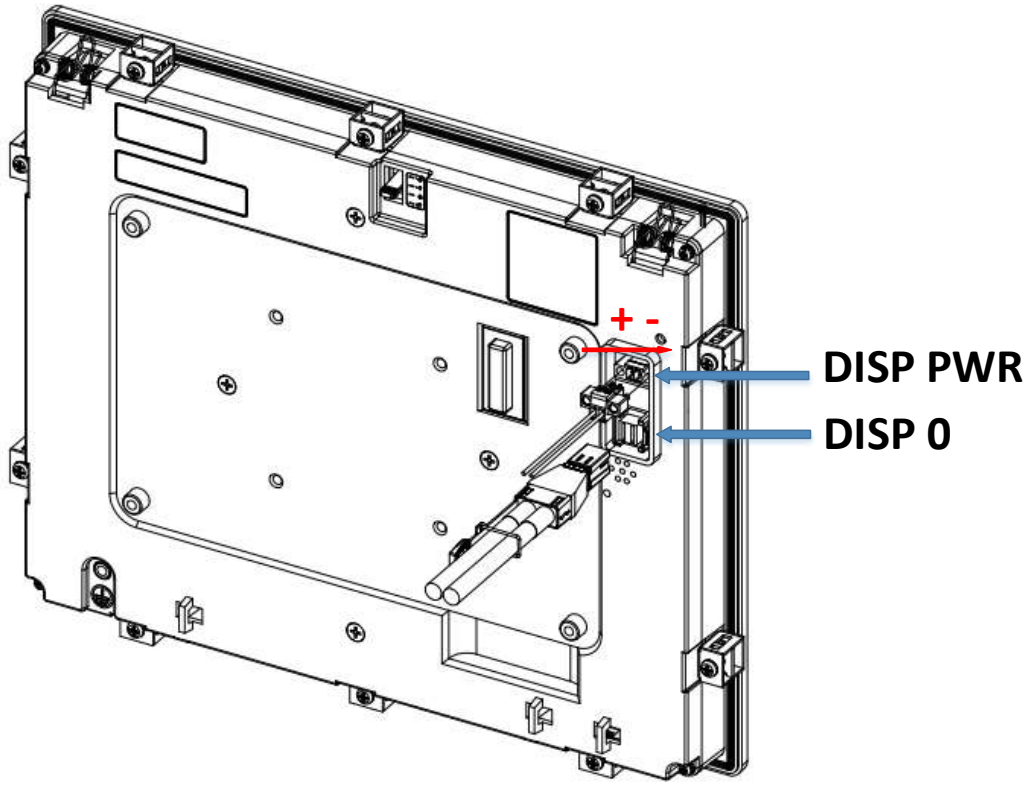
(3) Connect XP-VLink I/F, Power cable to Display Unit.

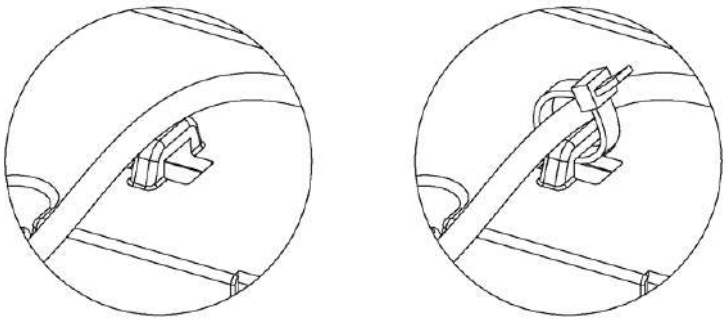


Notes

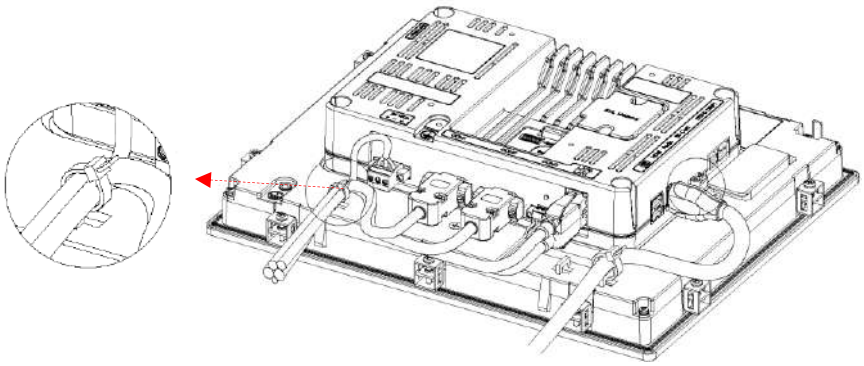
(1) DISP PWR input power is 15.5 V, please use the power supplied from the main unit.
* Power supply other than the power supplied from the main unit may cause equipment failure.

4.2.4 Secure the external interface cable

(1) Connect the cable tie to the external interface cable fixing hole on the back of the unit.



(2) Fix the cable tie firmly so that the external interface cable does not fall off by external force.



⚠ Caution

► The external interface cable anchor is an important factor in maintaining the explosion-proof performance. If it is not installed as above, the cable may be connected abnormally, causing sparks and explosion. Therefore, please familiarize yourself with the instructions above.

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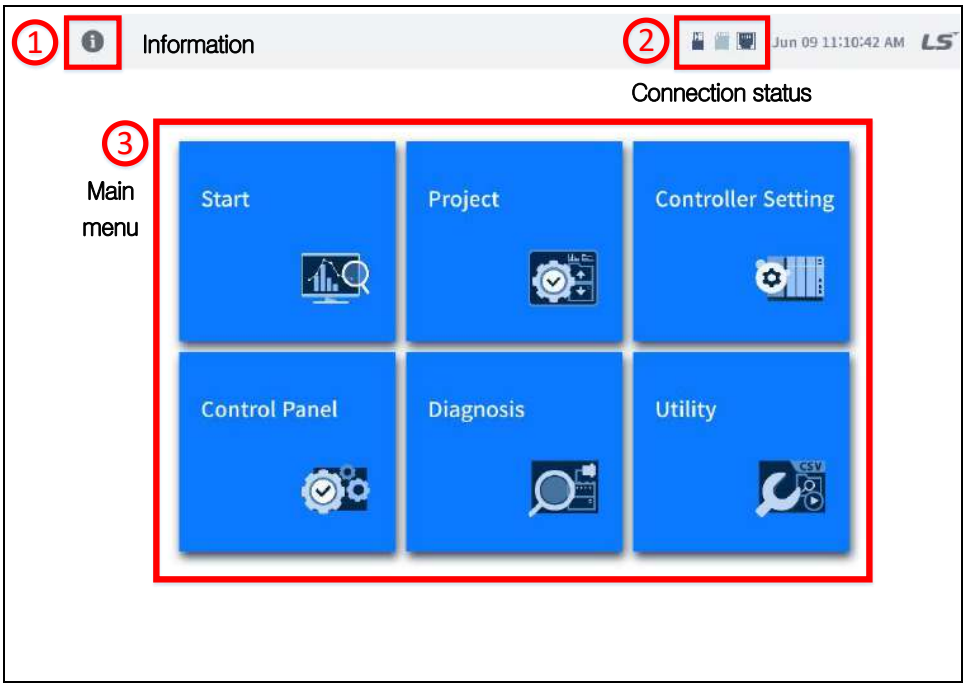
Chapter 5 XGT Panel Menu Explanation

After you turn on the power of the XGT Panel and complete booting, the main screen of the XP-Runtime is displayed. You can check product information and connected devices, and enter the main menu on the main screen.



[XGT Panel Default Screen]

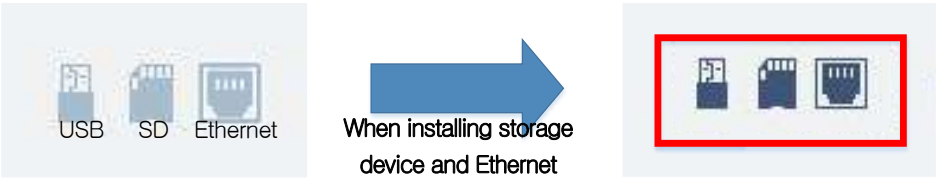
(1) Information

① When you click the Information icon, an item to check the product information pops up.

a : The name of a LXP-Series product in use is displayed.
b : The physical addresses of LAN0 and LAN1 are displayed.
c : An address with which you can contact is displayed.
d : It is connected to the LS ELECTRIC product information page.

(2) Connection status

② The connection status item displays the status of the storage device and Ethernet currently connected to the product. When a storage device and Ethernet are connected to the product, the corresponding item changes to a dark color icon.



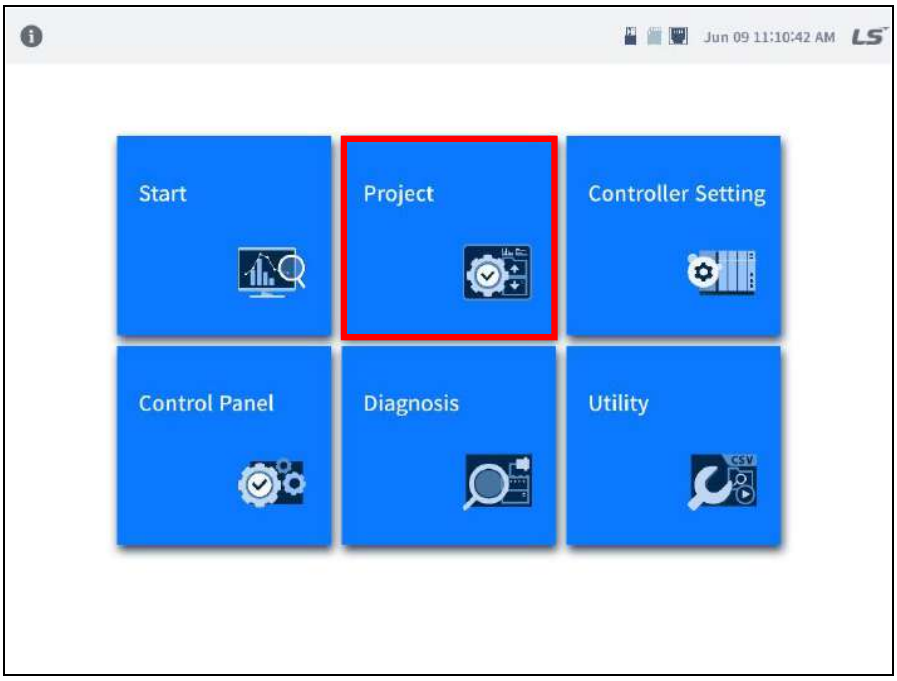
(3) Main Menu

③ Main menu displays the menus where you can set XP-Runtime. The function by each menu is as follows: For detailed functions, please refer to the details by menu in 5.1 ~ 5.5.

Item	Descriptions	Details	Notes
Start	It starts the project saved in XGT Panel.	-	-
Project	It is the menu for project settings.	Start	Refer to 5.1 Project.
		Screen	
		Maintenance	
Controller Settings	It is the menu for setting the controller connected to the XGT Panel.	Select Control Device	Refer to 5.2 Controller Settings.
		Common Setting	
		Communication Setting	
		Extended Setting	
Control Panel	It is the menu to set the environment of XGT Panel.	Display	Refer to 5.3 Control Panel.
		Touch	
		Date/Time	
		Ethernet	
		Sound	
		Remote Control	
		Menu Bar	
		System OS	
Diagnosis	It is the menu for the diagnosis function of XGT Panel.	Memory	Refer to 5.4 Diagnosis.
		Network	
		Camera	
		Touch	
		Others	
Utility	It is the menu with which you can set some functions used in XGT Panel easily.	File Send	Refer to 5.5 Utility.
		Multimedia Viewer	
		CSV Editor	

5.1 Project

It is the menu for operation and management of projects saved in XGT Panel.



5.1.1 Start

It is the menu related to the start method and screen settings of the projects saved in HMI. If you select the [START] tab in the [Project] screen as shown below, the screen moves to the setting items.

Menu	Description
Auto Start After Boot Up	If Auto Start After Boot Up is 'ON', the downloaded project is executed without entering XP-Runtime after the device is booted. At this time, the starting screen number runs as the starting page set in Set Start up Screen As.
Set Start up Screen As	It refers to the number of the screen displayed when a downloaded project starts. (※ The screen number is based on the number set in LXP-Designer.)

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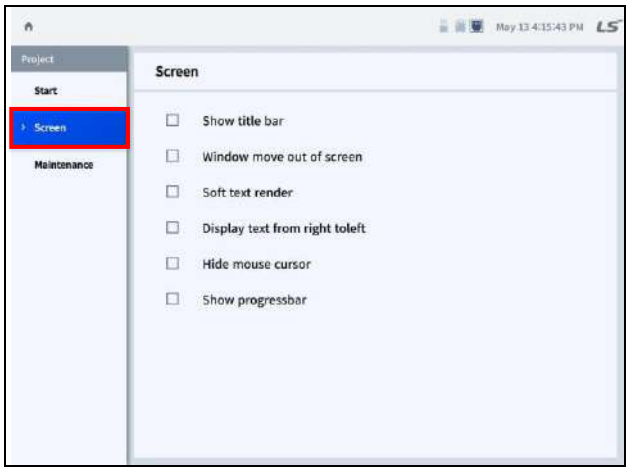
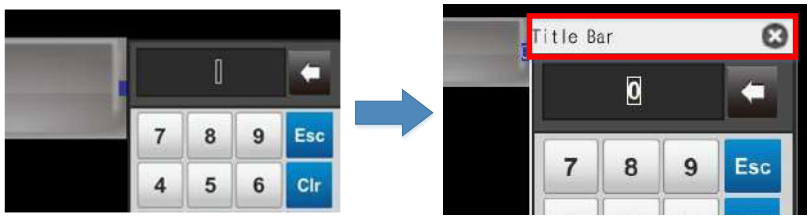
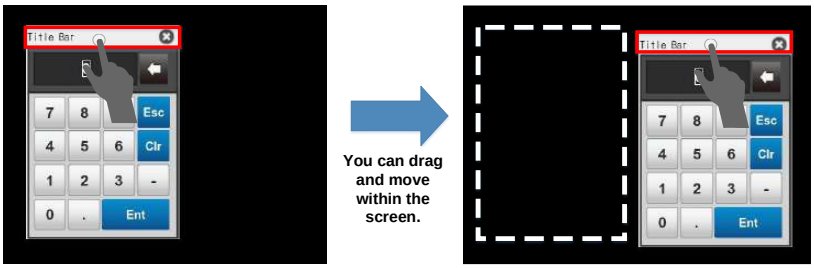
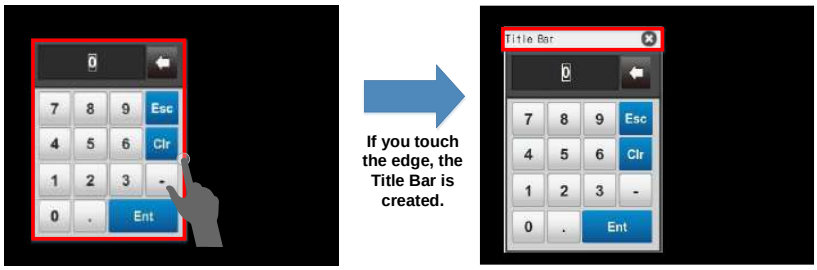
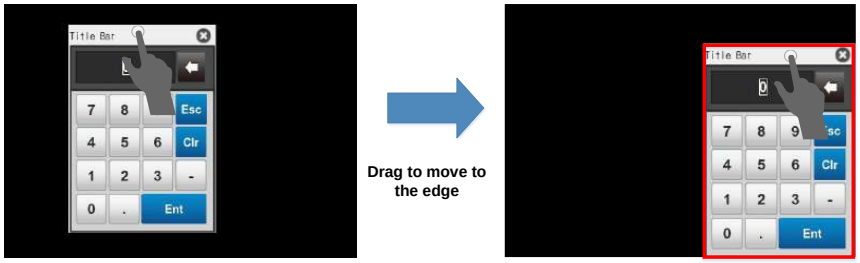
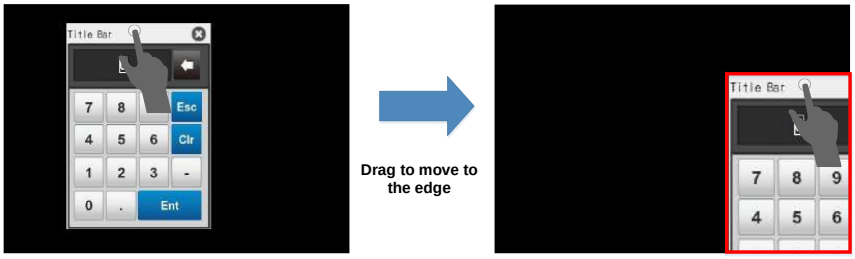
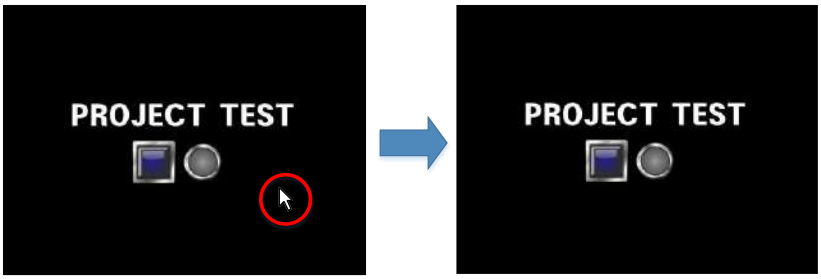
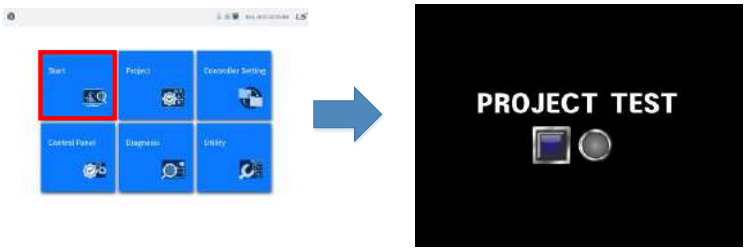
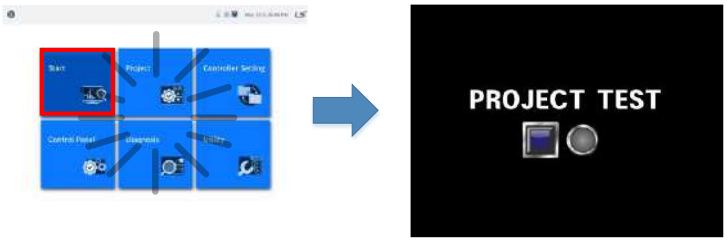
5.1.2 Screen

This is a menu for setting how to display objects and characters within the screen after the HMI project starts. If you select the [Screen] tab in the [Project] screen as shown below, the screen moves to the setting items.



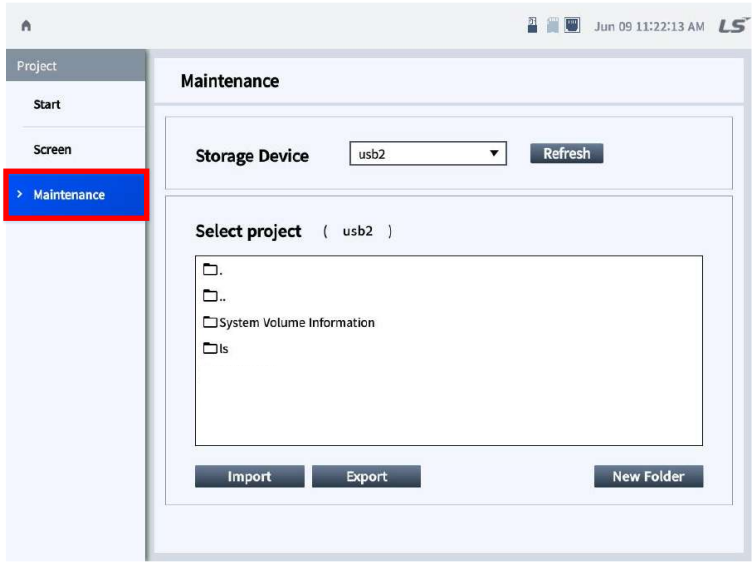
Menu	Description
Show title bar	The Title Bar is always shown on the pop-up window screen.  <No Title Bar> <Title Bar> You can drag while touching the Title Bar to move the window screen.  ※ If you want to move the window screen with Show title bar unchecked, you can touch the edge of the window screen to make the Title Bar show up.  After that, you can drag the Title Bar to move the window screen.

Menu	Description
Window move out of screen	You can drag so that the pop-up window screen moves out of the edge of the screen.  When Window move out of screen is not set, even if you drag the window screen as shown above, it does not move out of the edge of the screen.  When Window move out of screen is set, you can drag the window screen as shown above to move out of the edge of the screen.
Soft text render	Set the text on the device screen to look soft.
Display test from right to left	Change the text direction (left→right) to (right→left) within the project. (This is a function required when using an Arabic project.)
Hide cursor	This is a function to hide the mouse cursor on the screen when using a mouse.  **<Hide Cursor unchecked>** **<Hide Cursor checked>**

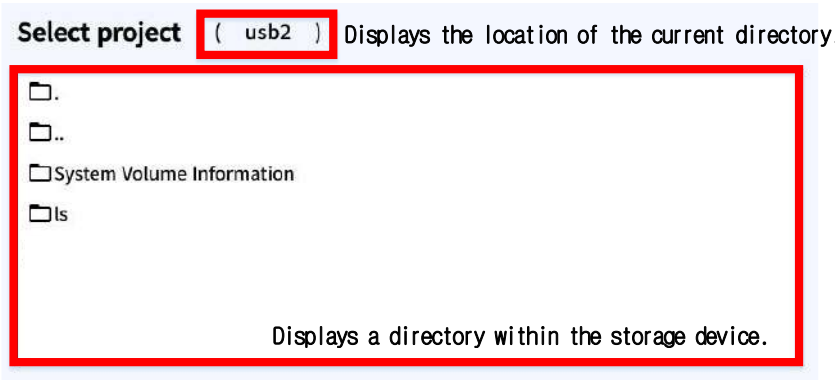
Menu	Description
Show progress bar	When the project is executed, the progress status of the project is displayed.  <Example for project start when Show progress bar is not set>  <Example for project start when Show progress bar is set>

5.1.3 Maintenance

This is a menu to import or copy a project from the storage device for product maintenance. If you select the [Maintenance] tab in the [Project] screen as shown below, the screen moves to the setting items.

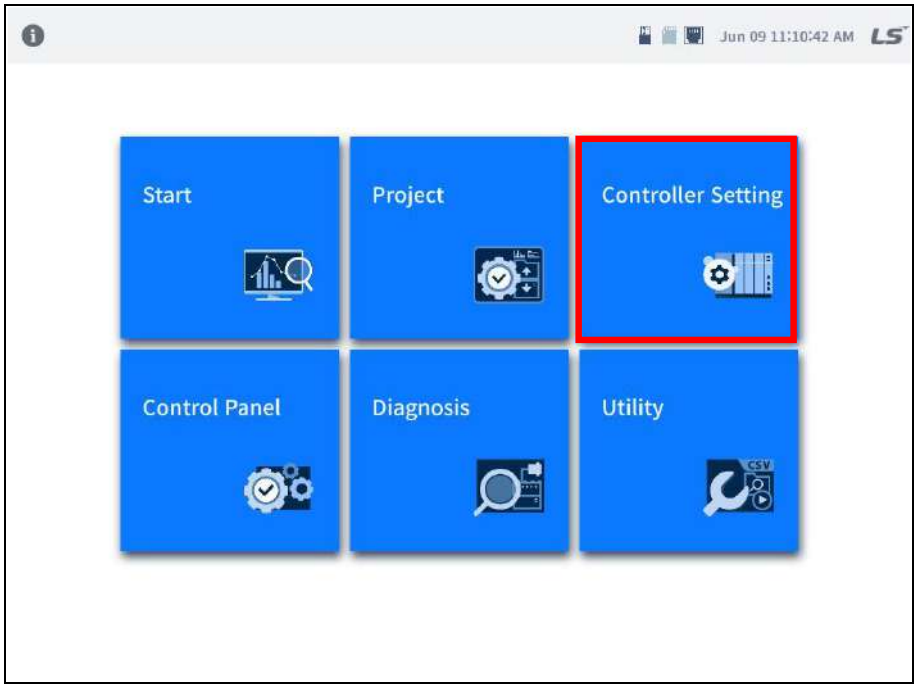


[Touch setting screen]

Menu	Description
Storage Device	Refers to the external storage device where a project is saved and moved, and you can select the storage device connected to the product. If the connected storage device is not visible, click the 'Refresh' button to refresh the list of the storage devices that are currently connected.
Select project	With a file explorer of the selected storage device, the functions of Import, Export, and New Folder are performed based on the folder displayed in Select project. 
Import	Overwrites the selected project file in the current directory location with a device. At this time, the project files that were saved previously in the device are deleted.
Export	Copies the project file of the current device and saves it in the current directory location.
New Folder	Creates a new folder in the selected folder.

5.2 Controller Settings

In Controller Setting, you can check and change the communication settings of the controllers connected to the XGT Panel.



5.2.1 List of Connected Devices

If you click [Controller Setting], you can see the list of set controllers as shown below. If you select a controller, you can check and set the settings for the corresponding controller and register up to 16 controllers.

Notes

You can see the PLC connection status only while the project data is sent to the XGT Panel.

5.2.2 Detailed Controller Settings

(1) Common Setting

You can set details for common setting items by communication drive of the controller. The below figure is an example where XGK Ethernet communication drive of the company is set, and you can change the setting value of the controller set in LXP-Designer.

* PLC Common Setting for Serial Communication

Item	Descriptions
Timeout(100 x ms)	Displays the timeout value of the set controller. For Timeout, input time *100ms values are applied.
Wait to Send(ms)	Displays the transmission waiting time of the set controller.
Timeout Retry Count	Sets the number of additional reconnection attempts after timeout.
Simulation Mode	Simulation Mode is a function used when performing simulation operation monitoring without actual communication with the controller. When you open the list of the Simulation Mode, there are two items: Not used and Offline **Not used:** It is the default value. It is a setting that does not use the simulation mode. **Offline:** You can operate various objects without communication connection. (For Offline setting, a timeout message does not occur, but an object does not actually operate.)
※ **After all settings are completed, click the Apply button to apply the settings.**	

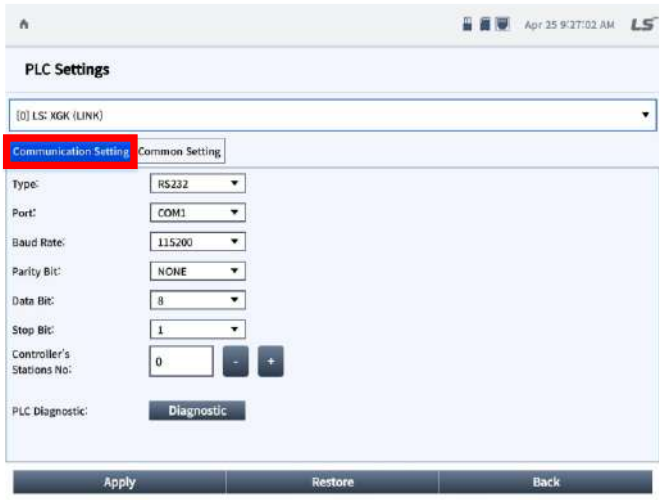
Notes

1) **Timeout**: For effective data communication, if there is no response within the timeout set when communicating with the controller, it is considered that data communication is not possible, and the next data request is made. At this time, retry communication as much as Timeout retry count since the timeout setting time.
2) **Wait to send**: This is a function to make a request to a controller after a delay as much as time set when a communication is made between LXP and the controller.
3) **Timeout retry count**: This is the number of attempts to communicate again when communication fails during the timeout period.

When communication fails for Timeout + (Timeout retry count x Timeout) period after monitoring starts, a Timeout message is displayed at the top of the project.

(2) Communication Setting

As the basic setting item for communication by communication drive of the controller, the figure below is an example where dedicated XGT Cnet communication and Ethernet communication drive of the company are selected. You can change the set value of the controller set in LXP-Designer in Communication Setting.



*** PLC Communication Setting for Serial Communication**

Item	Descriptions
Type	Displays the communication method of the set controller.
Port	Displays the communication port of HMI that communicates with the controller.
Baud Rate	Displays the communication speed of the set controller.
Parity Bit	Displays the parity bit type of the set controller.
Data Bit	Displays the data bit type of the set controller.
Stop Bit	Displays the stop bit type of the set controller.
Controller's Stations No	Displays the station number of the set controller.
PLC Diagnostic	You can check if communication with the corresponding controller is available based on the parameters set through communication setting. When clicking the Diagnostic button, a pop-up window for communication diagnosis is created, and if you click Start/Stop, you can execute and stop the diagnosis function.
※ After all settings are completed, click the Apply button to apply the settings.	

Notes

(1) For normal communication, you should connect a physical connection between the set COM Port and the controller, and Baud Rate, Parity Bit, Data Bit, Stop Bit, and Controller's Stations No., should match with the controller.

(2) The corresponding setting has been set as the default value set in LXP-Designer.

*** PLC Communication Setting for Ethernet Communication**

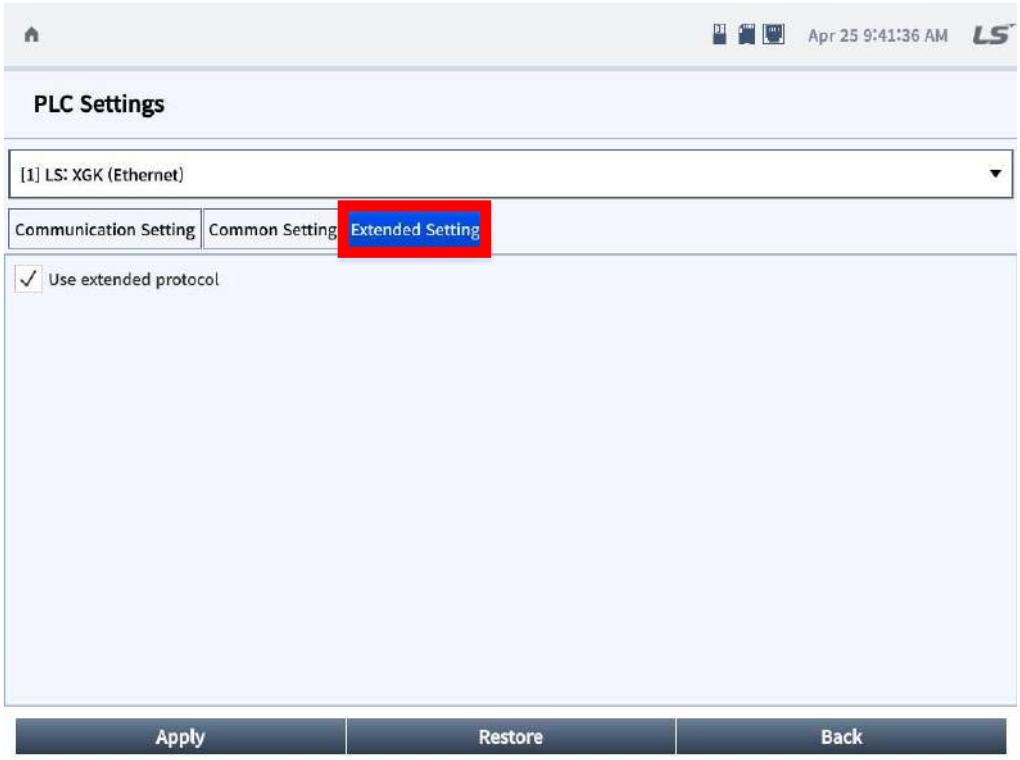
Item	Descriptions
IP	The IP of the controller connected by an Ethernet cable is displayed.
Target Port	The port to which the controller is to be connected is displayed.
Local Port	The local port of the controller is displayed.
PLC Diagnostic	You can check if communication with the corresponding controller is available based on the parameters set through communication setting. When clicking the Diagnostic button, a pop-up window for communication diagnosis is created, and if you click Start/Stop, you can execute and stop the diagnosis function.
Ping Test	If you click Ping Test, the Ping Test window pops up to check the physical connection status with the controller. When you touch the Start button, you can check the Ping Test result; when you touch the Stop button, the Ping Test is stopped. (When you check Unlimited ping, carry out the Ping Test more than 3 times.)
※ After all settings are completed, click the Apply button to apply the settings.	

Notes

(1) For Communication Setting, the setting may be different by controller.
(2) The corresponding setting has been set as the default value set in LXP-Designer.

(3) Extended Setting

Depending on the type of controller selected in LXP-Designer, the items, which can be set additionally, are displayed differently.



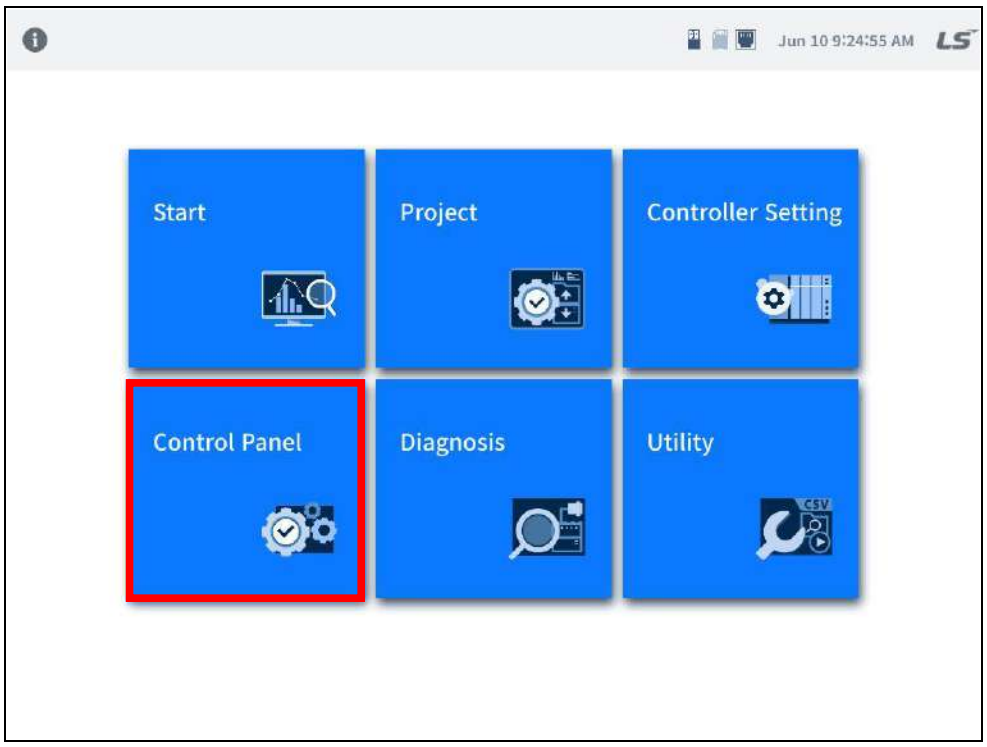
Item	Descriptions
Use extended protocol	Extended protocols can be used.
※ **After all settings are completed, click the Apply button to apply the settings.**	

Notes

For the Extended Setting menu, it is displayed only when support is available depending on the type of communication driver.

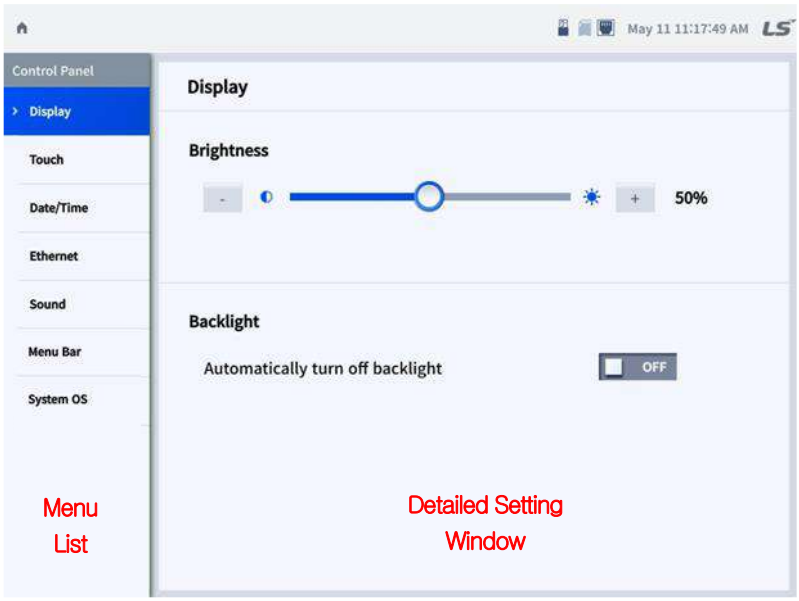
5.3 Control Panel

Through the Control Panel menu, you can set the overall operation of the device, such as the screen brightness, touch sensitivity, and update of the XGT Panel.



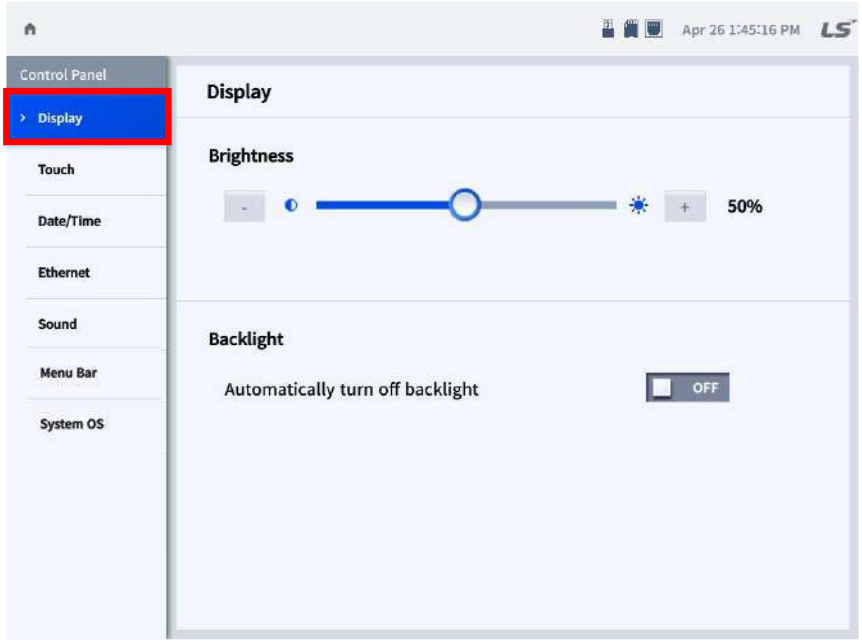
[XGT Panel Default Screen]

When you click [Control Panel], a list of settable menus is created on the left side as shown below, and detailed setting items for the corresponding menu are created on the right side.



5.3.1 Display

This is a setting menu related to LCD operation of XGT Panel.

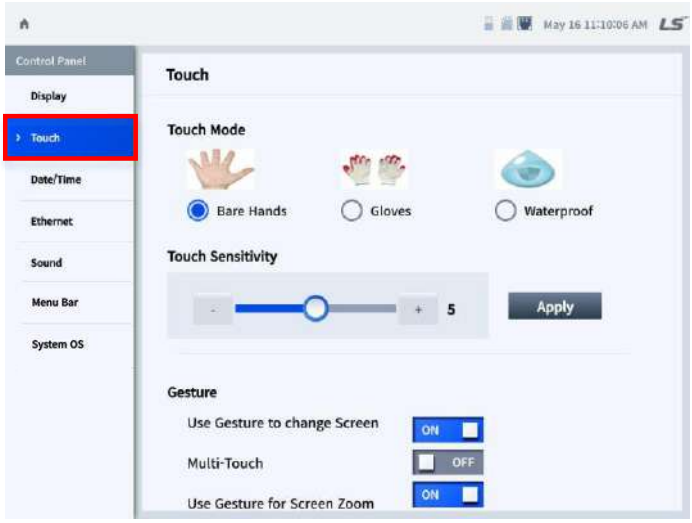


Item	Descriptions
Brightness	The LCD screen brightness can be set in the range between 1 and 100%.
Backlight	The LCD backlight operation can be set. - When Automatically turn off backlight is set to Off, the screen is always turned on. - When Automatically turn off backlight is set to On : The backlight turns off after the set time, and the setting range is 1 - 18,000 seconds. If you touch the screen while the backlight is off, the backlight turns on automatically.

VICPAS HMI Parts Center

5.3.2 Touch

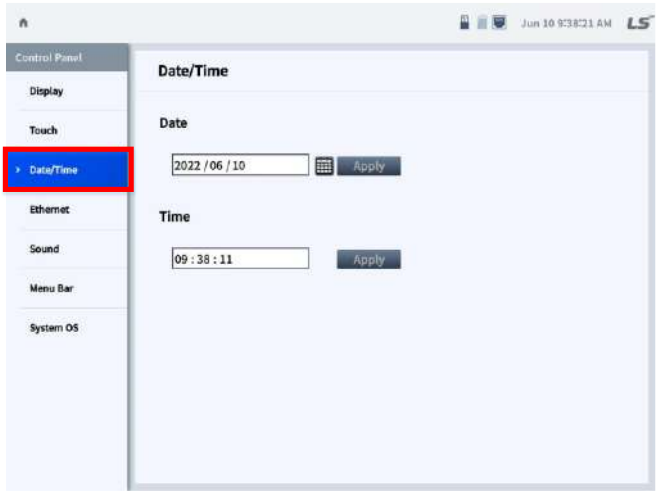
Detailed setting of XGT Panel Touch is available. The touch suitable for the installed environment can be set through setting the mode and sensitivity of touch.



Name		Description
Touch Mode		**Bare Hands:** Mode used when using a device by hands. **Gloves:** Mode used when using a device while wearing gloves. **Waterproof:** Mode used when the environment where the device is used is exposed to water. (※When changing the setting, touch the Apply button to apply it.)
Touch Sensitivity		Touch sensitivity can be adjusted by mode. (can be adjusted between step 0 and step 10) (※When changing the setting, touch the Apply button to apply it.)
Gesture	Use Gesture to change Screen	Switches the screen to gesture movements (move left or right). When the gesture is made on the left, the screen is switched to the screen of the previous screen number based on LXP-designer, and when the gesture is made on the right, the screen is switched to the screen of the next screen number.
	Multi Touch	You can touch the screen in multiple. (Touching more than two points possible)
	Use Gesture for Screen Zoom	You can touch two points on the screen to zoom in and out on the screen.

5.3.3 Date/Time

It sets the date and time displayed on the XGT Panel.



Name	Description
Date	Sets the date of the device. If you touch the number part in which the date was entered as shown below, the number pad pops up. If you enter the date to be set, press the button to complete input. ※ Touch the Apply button to apply changes.
Time	Sets the time of the device. If you select the number part in which the time was entered as shown below, the number pad pops up. If you enter the date to be set, press the button to complete input. ※ Touch the Apply button to apply changes.

Notes

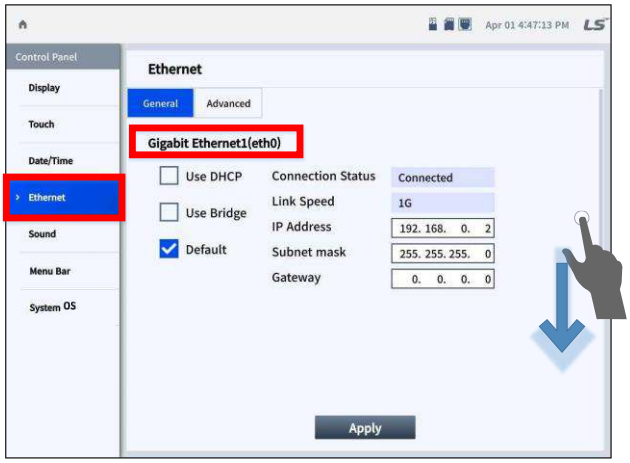
You can view and set the date/time in setting of View XGT Panel information in LXP-Designer as well.
For detailed usage, refer to “4.4 Display and change XGT Panel information” of LXP-Designer User's Manual.

5.3.4 Ethernet

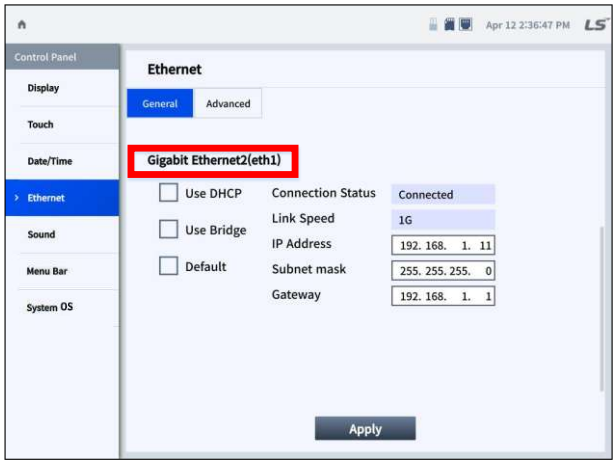
It is the menu for setting Ethernet of XGT Panel. This menu sets the parameters for LAN0 and LAN1.

(1) General

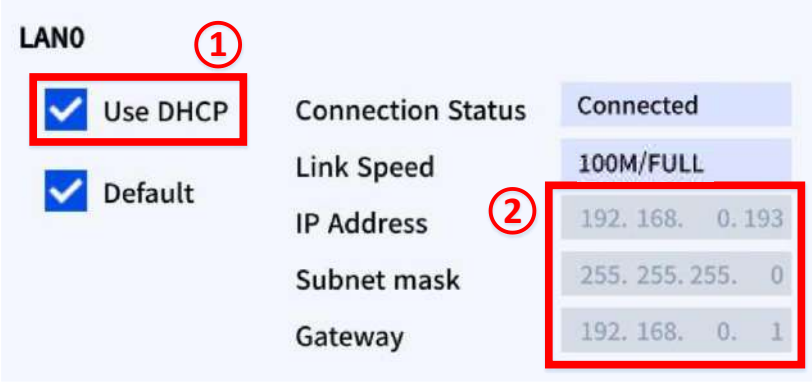
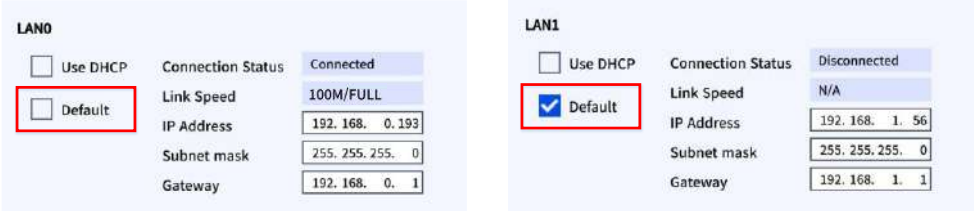
< LAN 0 (eth 0) >

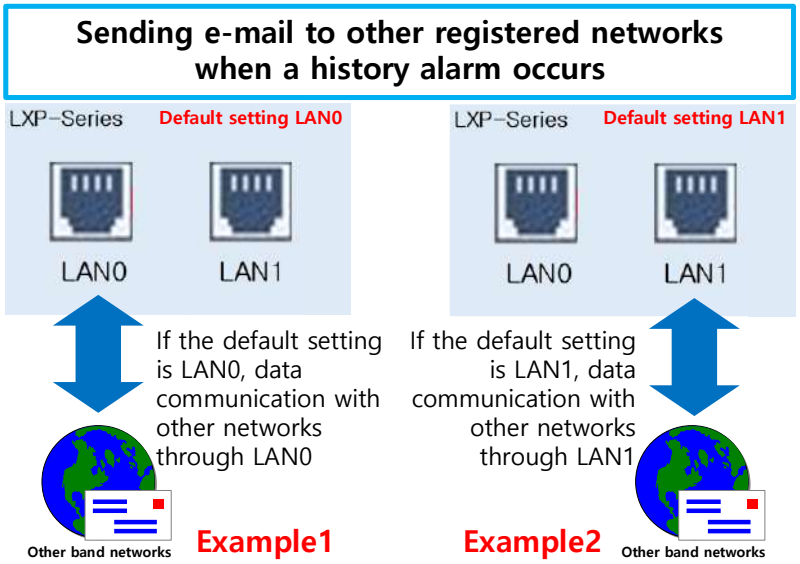


< LAN 1 (eth 1) >



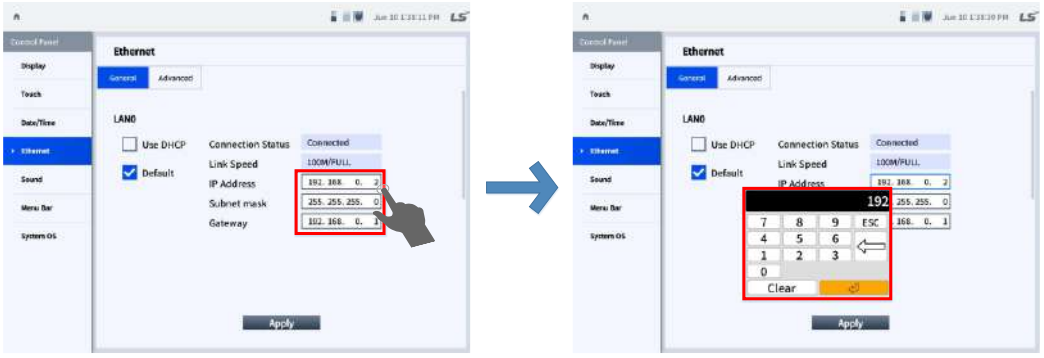
*** If you scroll down the screen, you can find LAN1.**

Name	Description
Use DHCP	Displays whether DHCP function is used or not.  1: When checking Use DHCP, IP, Subnet mask, and Gateway of 2 are disabled. 2: When checking Use DHCP, IP, Subnet mask, and Gateway are automatically assigned from the connected router. * If DHCP is unchecked, the 'Default' setting is LAN0.
Default	Default function can be applied only to either LAN0 or LAN1. **(When LAN1 Default is checked, LAN0 Default is off/When LAN0 Default is checked, LAN1 Default is off)** 

<table>
<tr><td></td><td>


<Example of setting Default to LAN1 or LAN2>
Example 1: When sending data to another band network, if LAN0 is the default setting, data such as email is sent and received via LAN0.
Example 2: When sending data to another band network, if LAN1 is the default setting, data such as email is sent and received via LAN1
</td></tr>
<tr><td>Connection Status</td><td>It displays whether Ethernet is currently connected.
Connection O: Connected. Connection X: Disconnected</td></tr>
<tr><td>Link Speed</td><td>It displays the communication speed of the currently connected Ethernet.
1G, 100M, 10M: Ethernet communication at speeds of 1G, 100M, and 10M respectively.

<1G> <100M> <10M>
FULL, HALF: Ethernet communication in full duplex (FULL) or half duplex (HALF) mode

<FULL> <HALF></td></tr>
<tr><td>IP Address
Subnet mask
Gateway</td><td>This refers to the address value of the device, and you can enter and edit each value.
If you select the number part in which the address value was entered as shown below, the number pad pops up. If you enter the address value, press ↵ to complete input.

</td></tr>
<tr><td colspan="2">※ After all settings are completed, click the Apply button to apply the settings.</td></tr>
</table>

Notes

1**) Using DHCP**: This is a function to automatically receive an IP address from the connected router. When using the function, the directly set IP address is updated with the assigned IP.

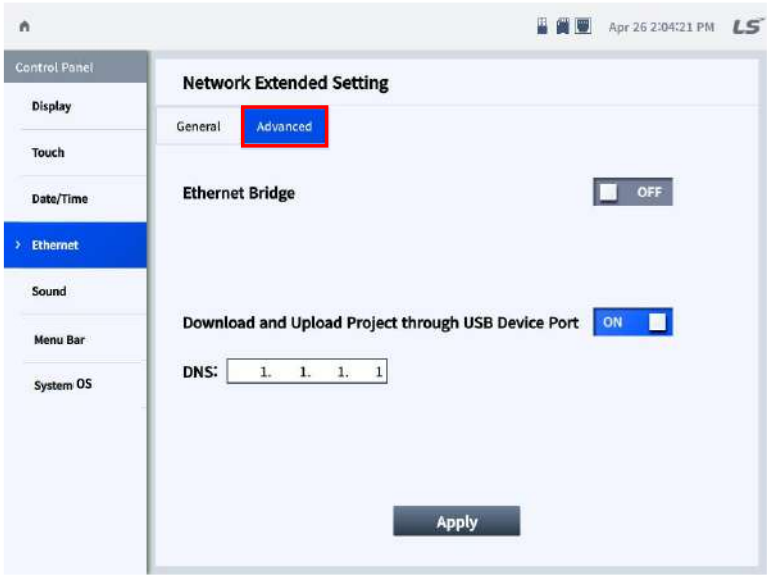
2) **IP address**: IP address to set for each LAN0, LAN1 Ethernet interface.

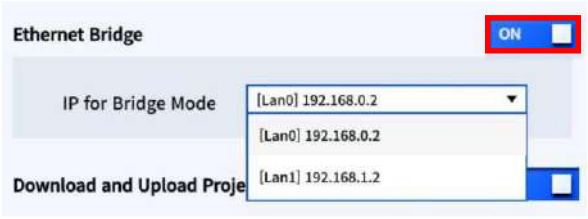
Subnet Mask: Specifies the communication area of the network.

Example 1) In the case of IP address: 192.168.1.2 and subnet mask: 255.255.255.0, the network allocation area is 192.168.1.1 to 192.168.1.254.

Gateway: Acts as a conduit through which to go to different networks.

(2) Advanced



Name	Description
Ethernet Bridge	LAN0 and LAN1 data can be connected to configure the system without a network switch. (For detailed description, please refer to **Feature 1.2 'Supporting Ethernet Bridge function'**.)  When the ON button is checked, IP for Bridge Mode is activated. In IP for Bridge Mode, you can select a LAN IP to be used as Ethernet Bridge.
Download and Upload Project through USB Device Port	Sets whether or not to use the project upload and download functions through the USB device port.
DNS	Sets DNS.
※ After all settings are completed, click the Apply button to apply the settings.	

Notes

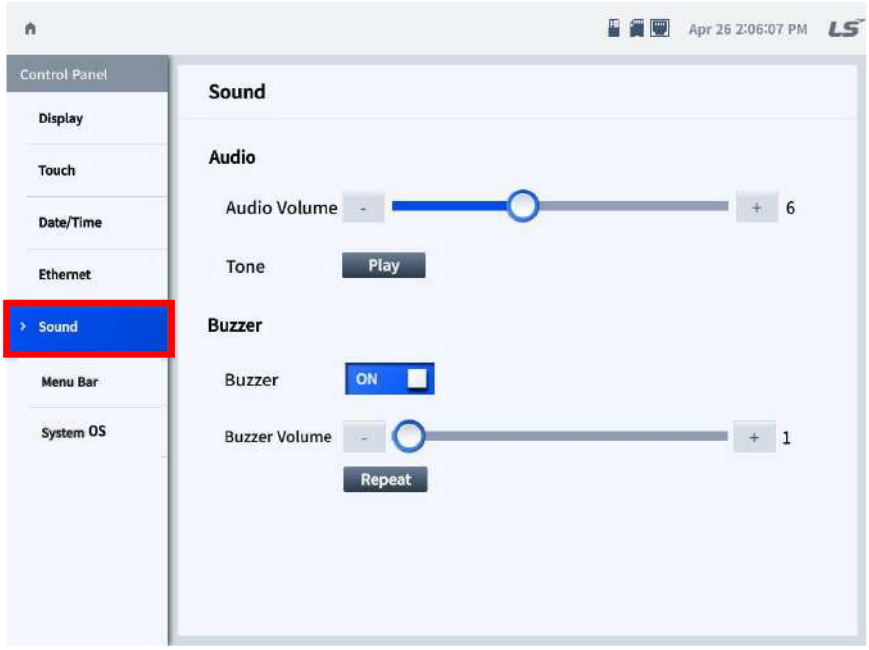
If you download a project created in LXP-Designer after 1:1 connection with PC, it is recommended to set as follows:

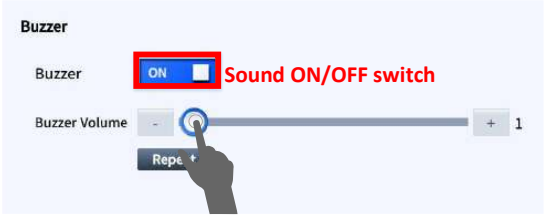
1) XGT Panel setting
- IP Address : 192.168.0.10
- Subnet Mask: 255.255.255.0
- Gateway : 192.168.0.1

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

5.3.6 Sound

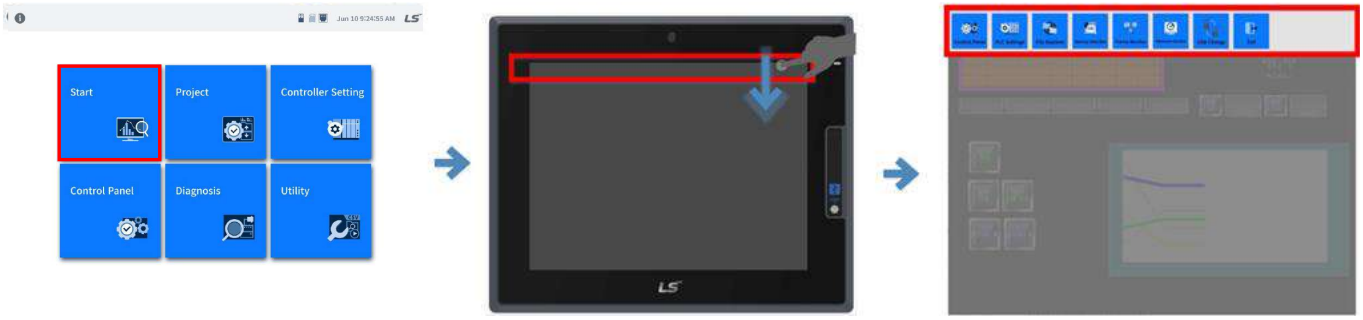
You can set the sound and buzzer functions of XGT Panel.



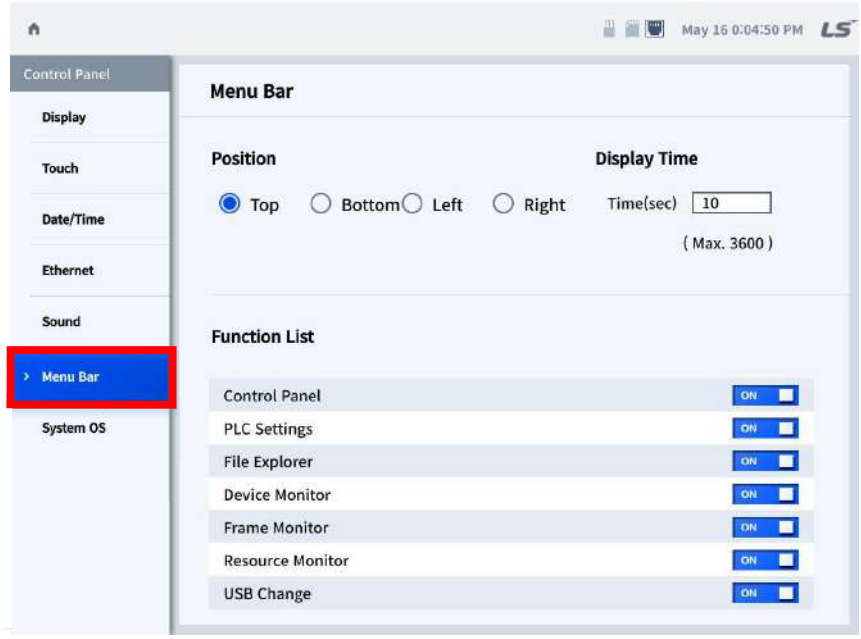
Name	Description
Audio	Sets the volume of the sound output using the speaker connected to the device. You can drag while touching the Audio Volume bar to adjust the volume, or you can touch + and - on both sides of the Audio Volume bar to adjust the volume. (Set between minimum 0 - maximum 16.)
PLAY	If you press this button, volume is output once at the set level.
Buzzer	The buzzer sound output from the device can be set. The sound can be changed to OFF mode by using the ON/OFF switch.  You can drag while touching the Buzzer Volume bar to adjust the volume, or you can touch + and - on both sides of the Buzzer Volume bar to adjust the volume. (Set between minimum 0 - maximum 10.)
Repeat	If you press this button, volume is output once at the set level.

5.3.7 Menu Bar

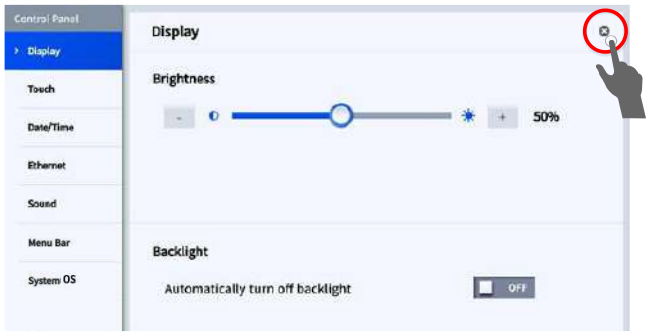
This is a function provided so that a user can use the device status and convenience functions more conveniently after a project starts. The initial setting is to be displayed at the top, and the menu bar is displayed upon operation as follows.

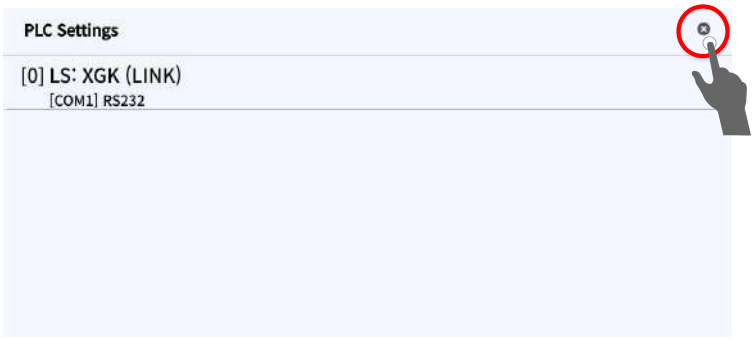


<Start project> <Gesture action over the top of the device from top to bottom> <Menu bar display>



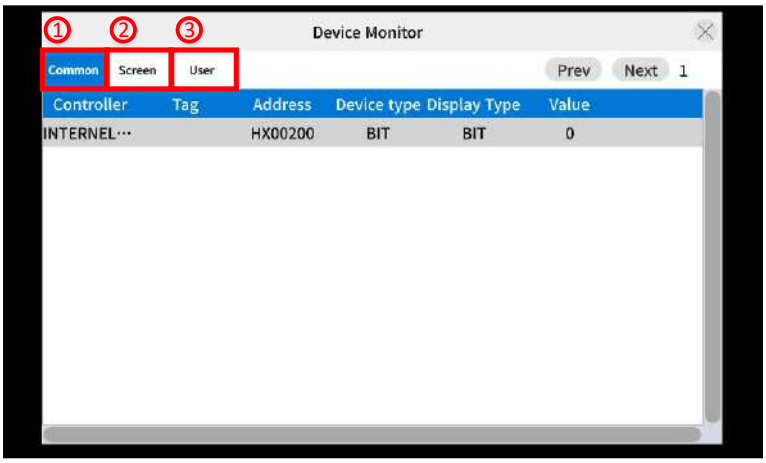
Name		Description
Position		Sets the position of the menu bar. (up, down, left, and right can be set)
Display Time		Shows automatic closing time of the display. The default value is 10, and when set to 0, automatic closing does not operate. Up to 3,600 seconds can be set.
Function List	Control Panel	When set to ON, the control panel menu appears on the menu bar within a project. When touching it, the screen is switched to the control panel, and when you touch x on the top right, the screen returns to the monitoring screen.

<table>
<tr>
<td rowspan="3">Function List</td>
<td></td>
<td> 
</td>
</tr>
<tr>
<td>PLC Settings</td>
<td>When set to ON, the controller setting menu appears on the menu bar within a project.

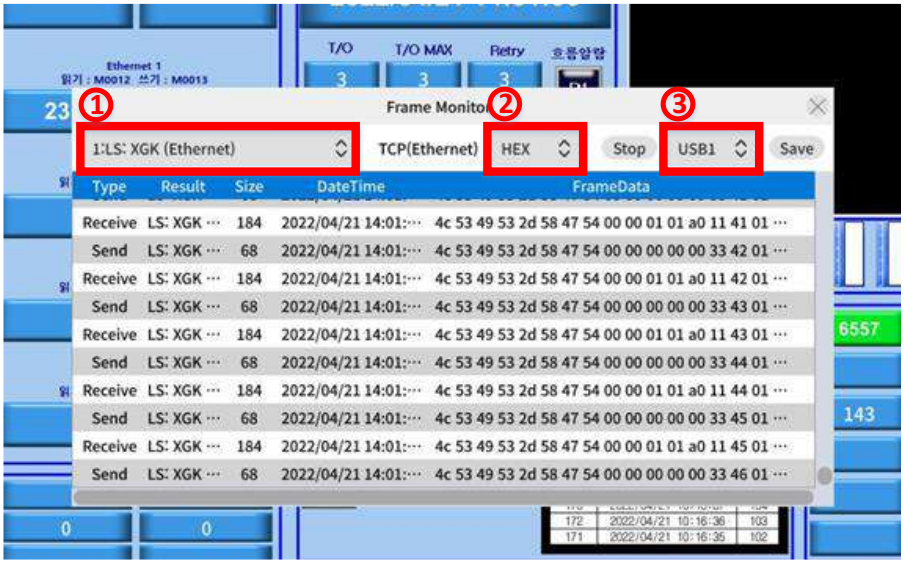
When touching it, the screen is switched to the controller setting screen, and when you touch x on the top right, the screen returns to the monitoring screen.
 
</td>
</tr>
<tr>
<td>File Explorer</td>
<td>When set to ON, the file explorer menu appears on the menu bar within a project.

When touching it, the file explorer pop-up window appears, and you can use the file copy, move, delete, and run functions. (* Refer to 5.5.1 How to use File Send menu.)
</td>
</tr>
</table>

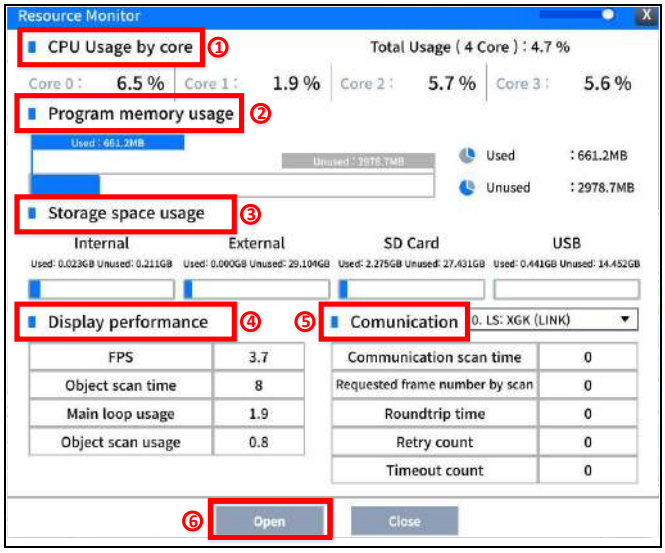
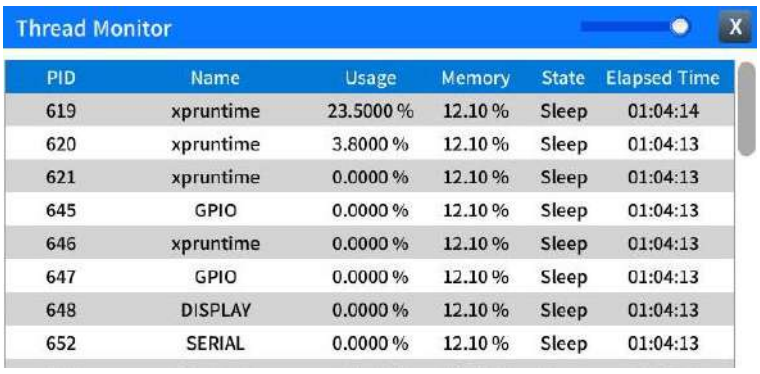
<table>
<tr>
<td rowspan="2">Function List</td>
<td>Device Monitor</td>
<td>When set to ON, the device monitor menu appears on the menu bar within a project.



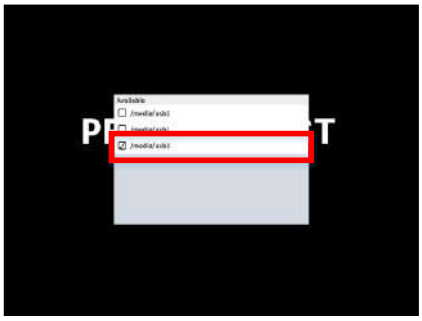
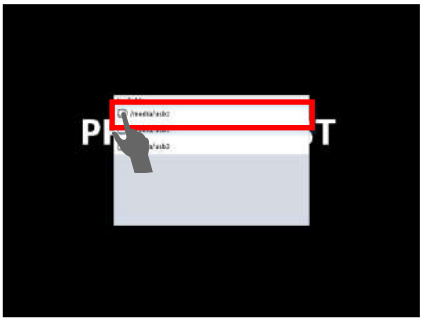
① Common: Displays a list of all devices set in logging, recipe, alarm, etc.
② Screen: Displays a list of all devices connected to objects placed on the screen.
③ User: Directly adds a device that does not exist in Common and Screen for monitoring.</td>
</tr>
<tr>
<td>Frame Monitor</td>
<td>When set to ON, the frame monitor menu appears on the menu bar within a project.

When touching it, the frame monitor pop-up window appears. You can touch the Start button to check the sending/receiving frame, and if you touch the Save button, the sending/receiving frame is saved in the storage device.
 

① Select the controller where you want to see the frame.
② Select View frame in Hexar or ASCII code.
③ Select a storage device to save the frame.</td>
</tr>
</table>

Function List	Resource Monitor	When set to ON, the resource monitor menu appears on the menu bar within a project. When you touch this, the resource monitor pop-up window appears.  ① CPU Usage by core: CPU usage of quad-core by core ② Program memory usage: Memory usage of the current project ③ Storage space usage: Memory usage by storage device ④ Display performance: 1) **FPS**: Frames per second 2) **Object scan time**: Scan time for objects in the screen 3) **Main loop usage**: CPU occupancy of message loop processing messages 4) **Object scan usage**: CPU share of threads that scan objects ⑤ Communication 1) **Communication scan time**: 1 scan time for communication monitoring 2) **Requested frame number by scan**: Number of request frames per scan 3) **Roundtrip time**: Time required for 1 packet transmission/reception per unit 4) **Retry count**: Number of accumulated retries by the controller 5) **Timeout count**: Number of accumulated timeouts of the controller ⑥ Open: Creates a thread monitor pop-up window when you touch Open. 

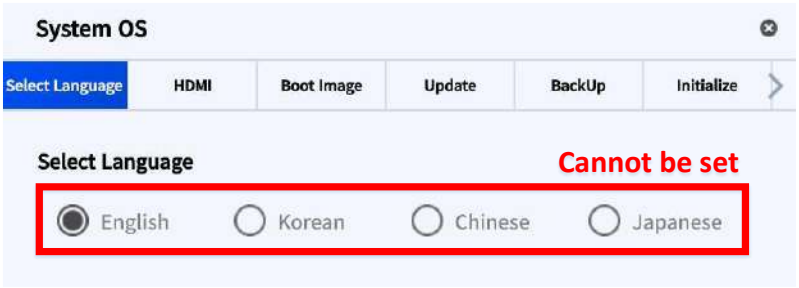
<table>
<tr><td rowspan="2">Function List</td><td>USB Change</td><td>When set to ON, the USB Change menu appears on the menu bar within a project.

When touching it, a pop-up window for selecting a USB is created, and the USB with a check mark is an USB in use among the USBs currently installed.
  
If you touch the checkbox of another USB when changing the USB in use, it is automatically applied.</td></tr>
<tr><td>Exit</td><td>It is the button that is present on the menu bar at all times. When touching it, a pop-up window asking whether or not to return to the Runtime initial menu screen is created.

When touching the YES button, it returns to the Runtime initial menu screen.</td></tr>
</table>

Notes

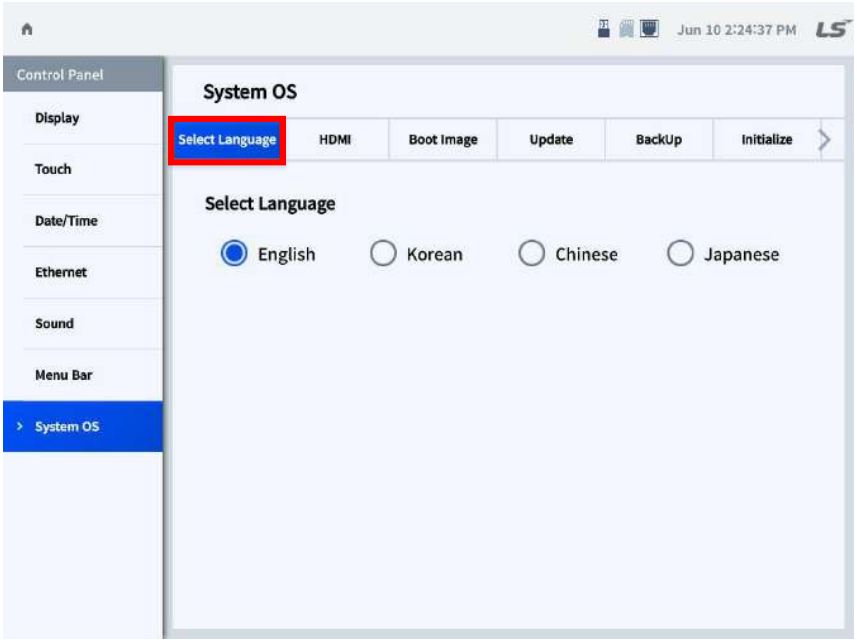
You cannot use the language selection function of the system OS in the control panel entered through the menu bar.

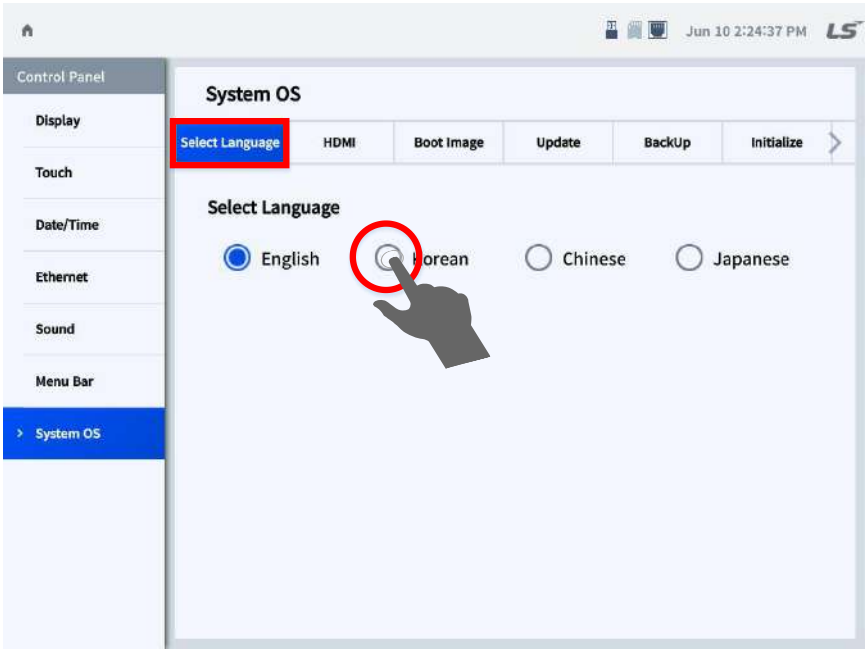


5.3.8 System OS

(1) Select Language

This allows you to set the language. (Setting English, Korean, Chinese and Japanese possible)

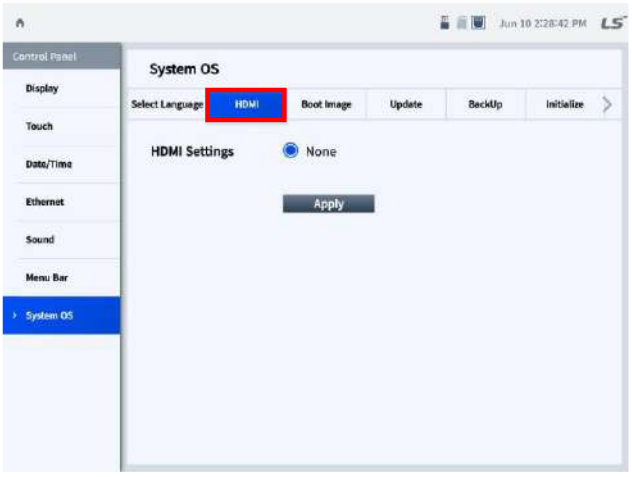




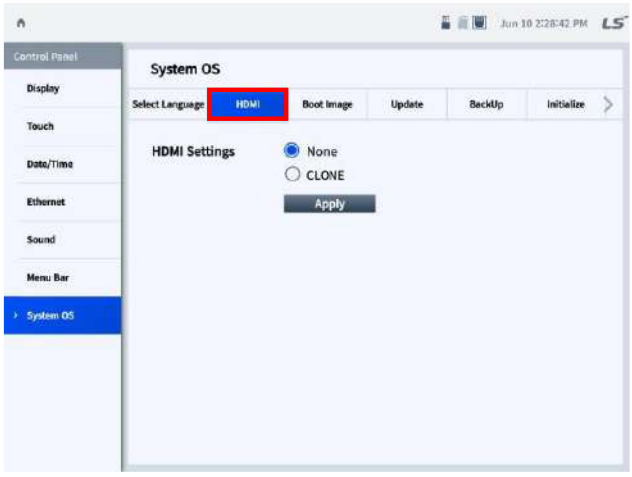
*** When selecting the checkbox of the language you want to change,**
The runtime restarts and you go to the initial screen where the language changed.

(2) HDMI

If you connect the monitor and the XGT Panel with an HDMI cable, you can see the screen of the XGT Panel on the monitor as well.

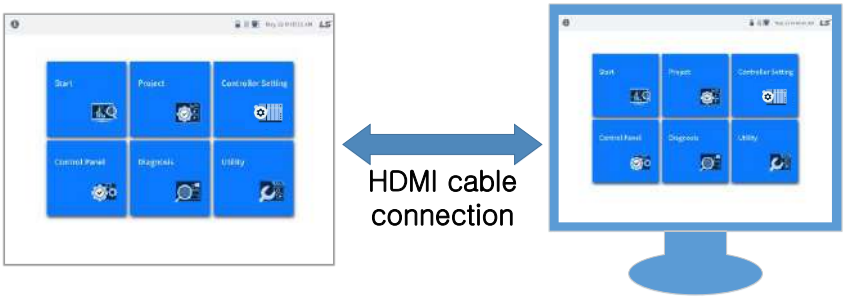


<Basic settings before HDMI cable connection>



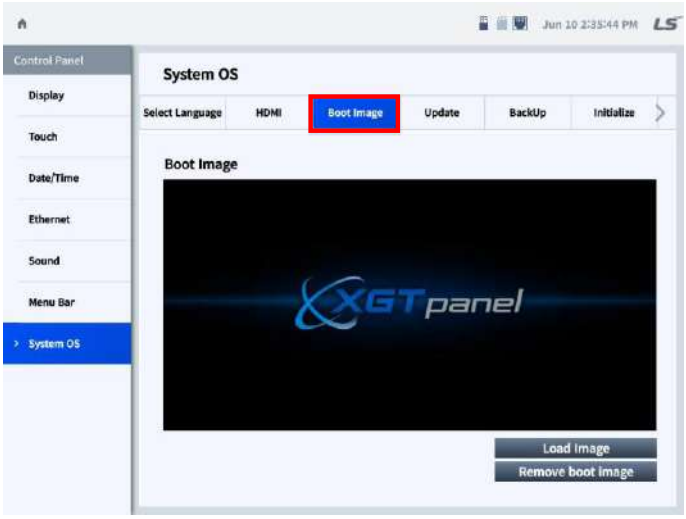
<HDMI settings activate after HDMI cable connection>

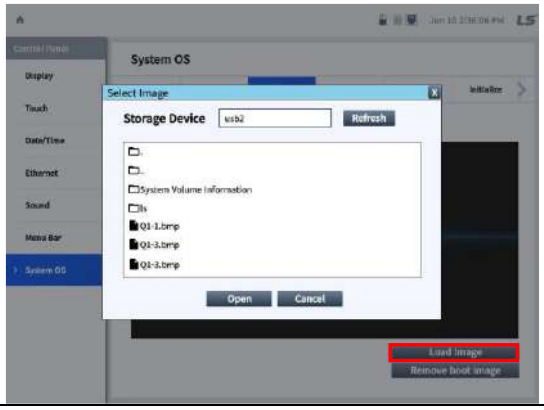
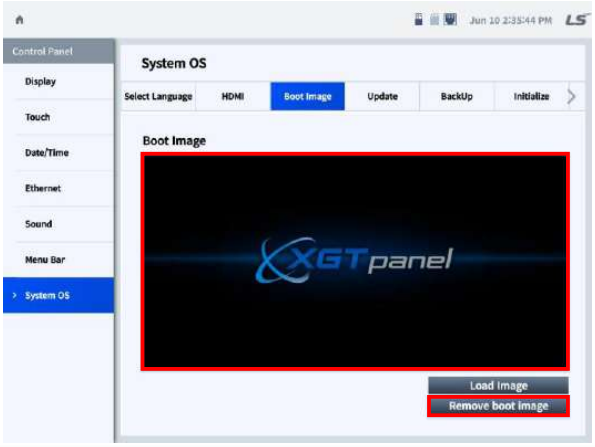
*** When an HDMI cable is attached, the power is reset once to create additional HDMI settings.**

Name	Description
None	When None is checked, the monitoring function using the extended monitor is not used.
Clone	When Clone is checked, the extended monitor monitors the same screen as the XGT Panel. 
※ After the settings are completed, click the Apply button to apply the settings.	

(3) Bootimage

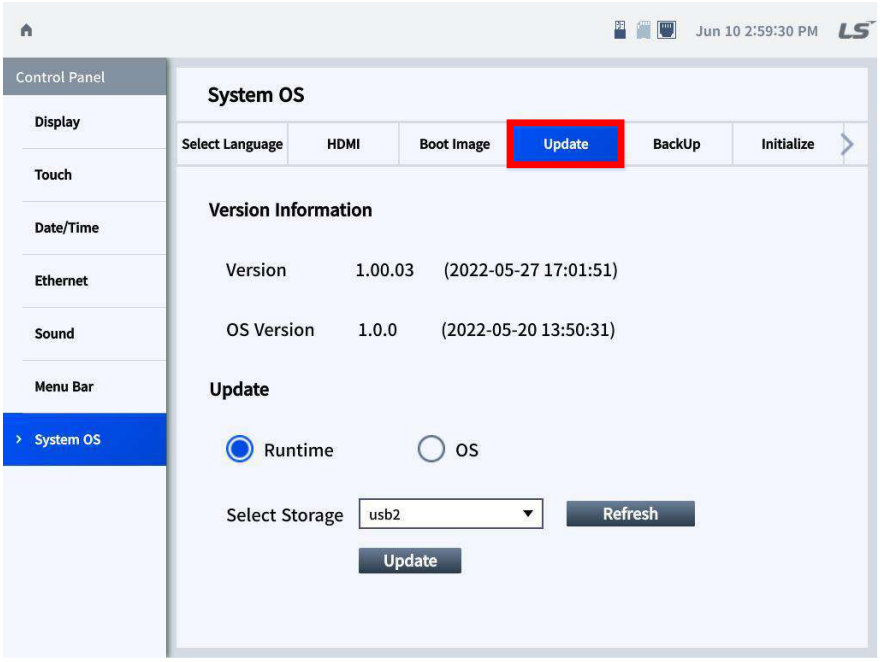
You can set the system boot image.

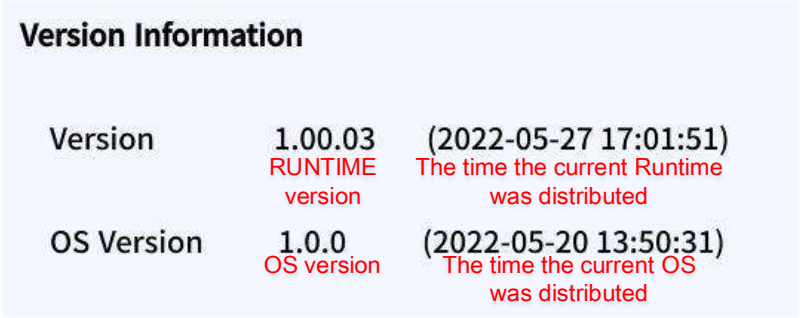
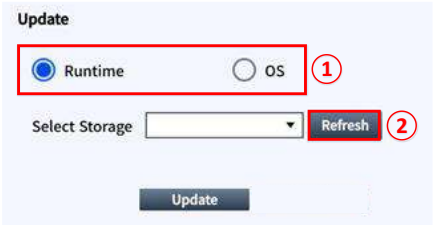
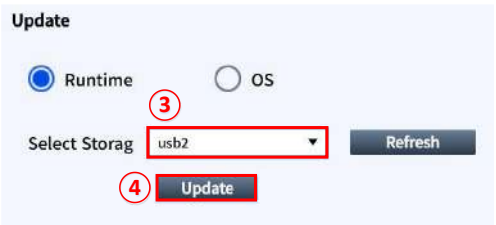


Name	Description
Load Image	When touching the Load image button, the file explorer appears and you can find and select the path where the boot image exists. When selected, the selected image is created in the Boot image box. 
Remove boot image	When the image removal button is touched, a pop-up window asking whether to delete the Boot image. If the 'Yes' button is touched, the image set as the boot image is deleted, and the initial XGT Panel logo boot image is returned. 

(4) Update

It updates Runtime or OS using the storage device.



Name	Description
Version Information	You can check Runtime version and OS version. 
Update	You can select and update Runtime or OS. Insert the USB storage device or SD card in which the update file is included, and then carry out the update as follows. ① Select Runtime or OS to update. ② Click the Refresh button. ③ The storage device read from Select Storage shows up. ④ When you click the Update button, A pop-up window will appear asking if you want to proceed with the update. If you touch the 'Yes' button, the update will proceed.  

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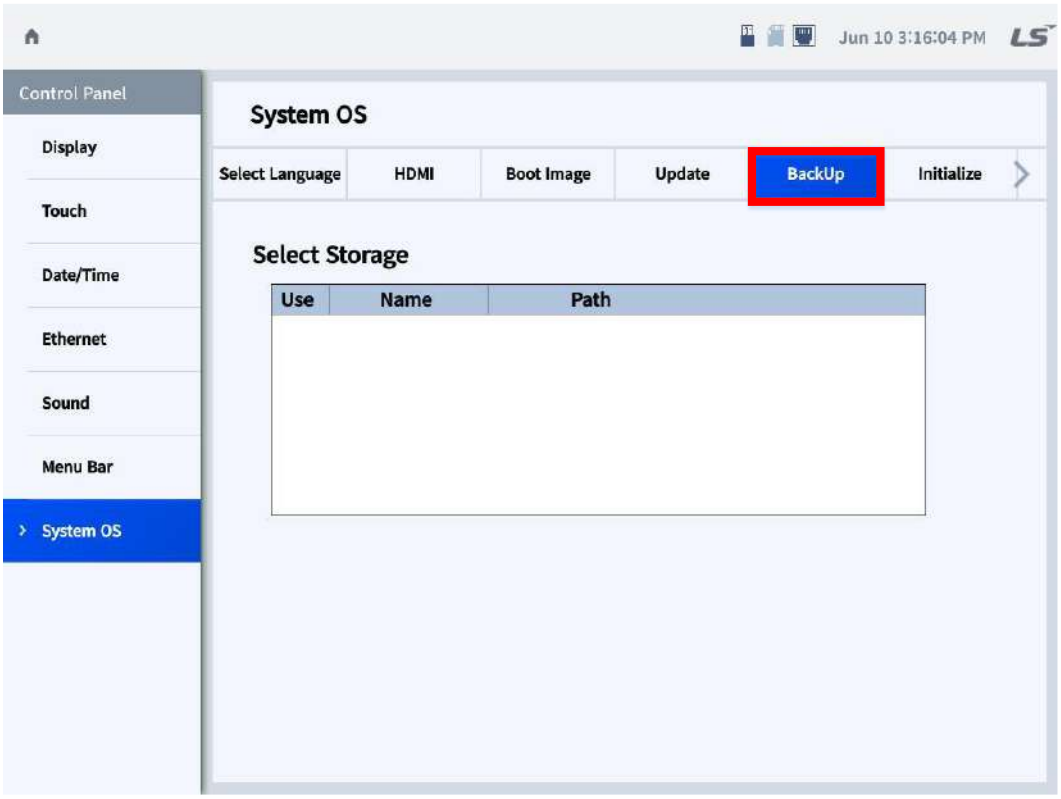
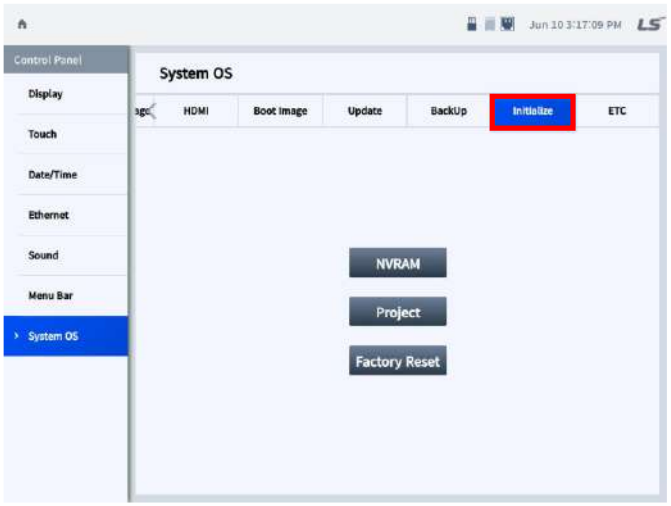
(5) BackUp

You can select a storage device to be backed up.



(6) Initialize

You can execute NVRAM memory, project initialization, and factory reset.



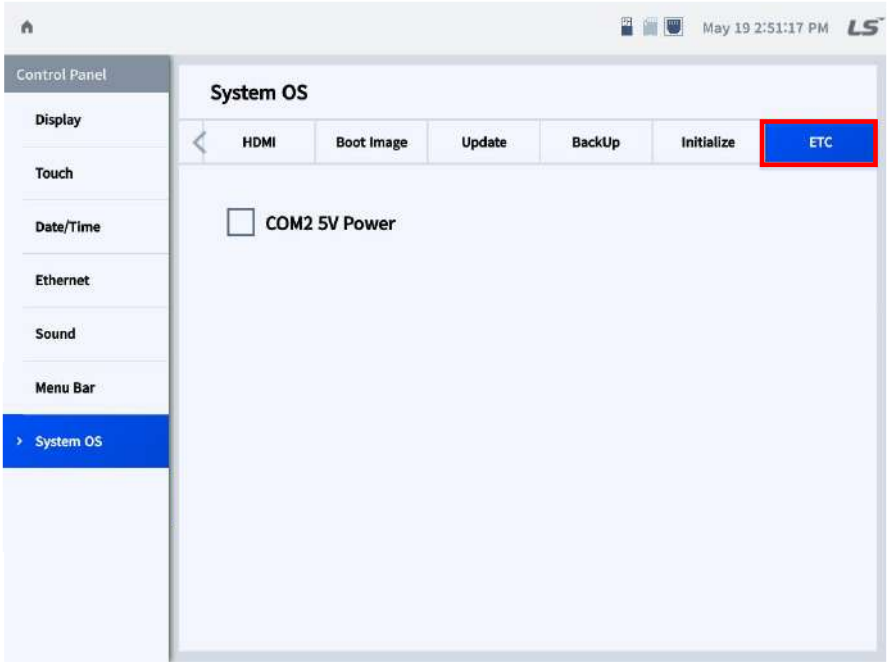
Name	Description
NVRAM	When touching the YES button on the pop-up window created when NVRAM is touched, NVRAM memory is reset.
Project	When touching the YES button on the pop-up window created when you touch the Project button, the project file downloaded from LXP-Designer is reset.
Factory Reset	When touching the YES button in the pop-up window created when you touch the Factory Reset button, the factory reset is executed.

Notes

If the factory reset is executed, the existing projects are deleted and all set values are reset to the initial values.

(7) ETC

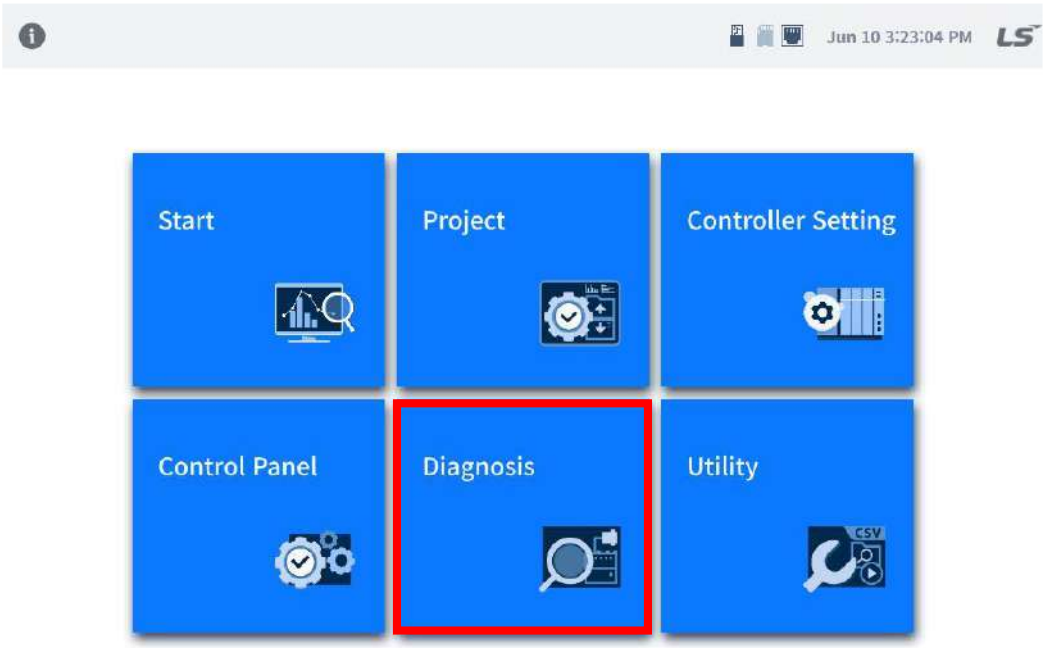
You can output 5V voltage from the COM2 port.



*** If you check the checkbox, it is applied automatically.**

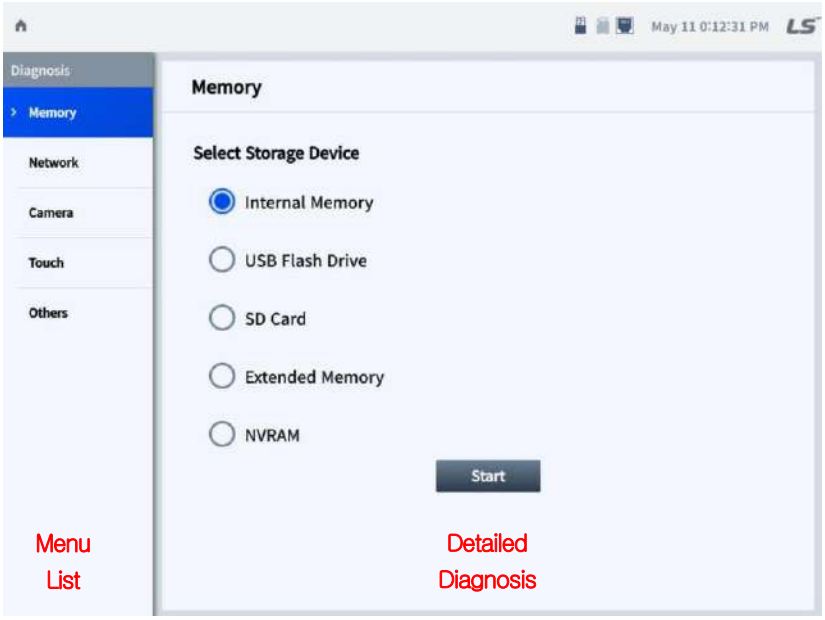
5.4 Diagnosis

You can diagnose various memory, network, camera, and touch functions.



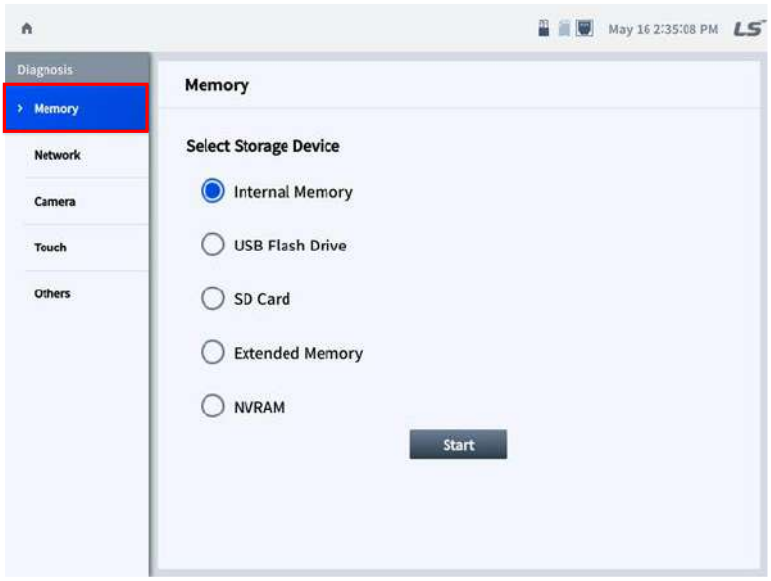
[XGT Panel Default Screen]

If you touch [Diagnosis], a menu list for various diagnoses shows up on the left. If you touch the menu on the left, the detailed diagnosis screen of the corresponding menu is created on the screen on the right.

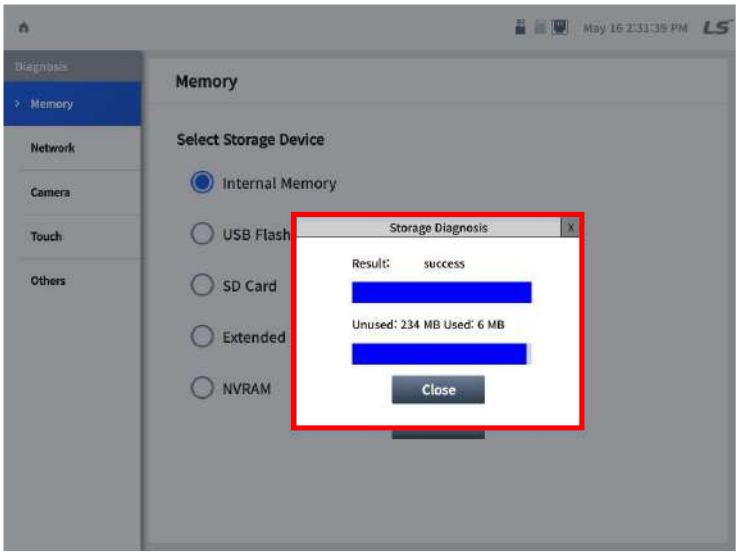


5.4.1 Memory

You can diagnose the memory usage status of various storage devices.



*** Check the memory device you want to diagnose, and then click Start to start the diagnosis.**

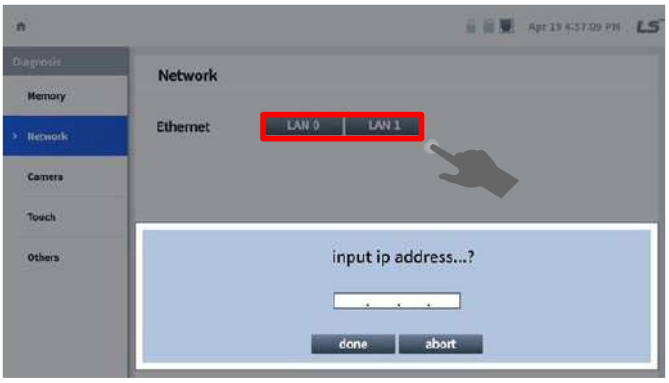


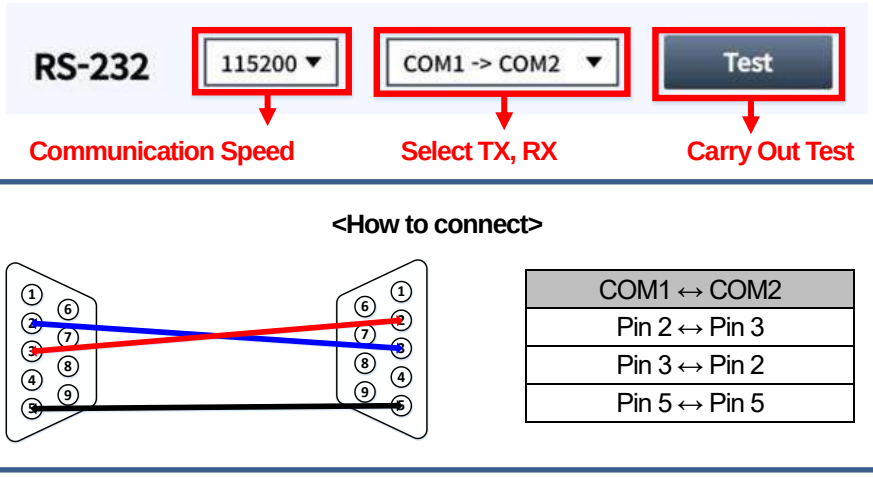
* If the storage device is recognized, a success message is created. If it cannot be recognized, a fail message is created.

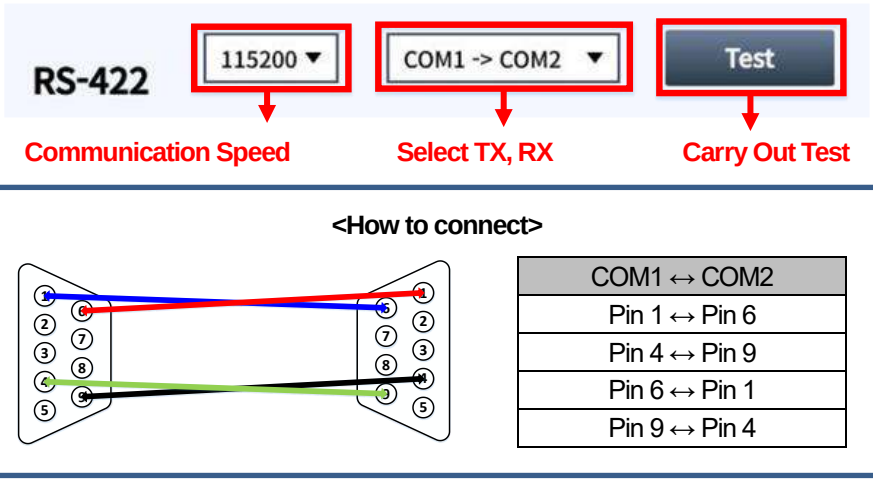
Name	Description
Internal Storage	Checks the available storage space and used space of the internal storage device.
USB Flash Drive	Checks the available storage space and used space of the USB storage device.
SD Card	Checks the available storage space and used space of the SD Card.
Extended Memory	Checks the available storage space and used space of the expanded memory.
NVRAM	Checks the available storage space and used space of NVRAM.

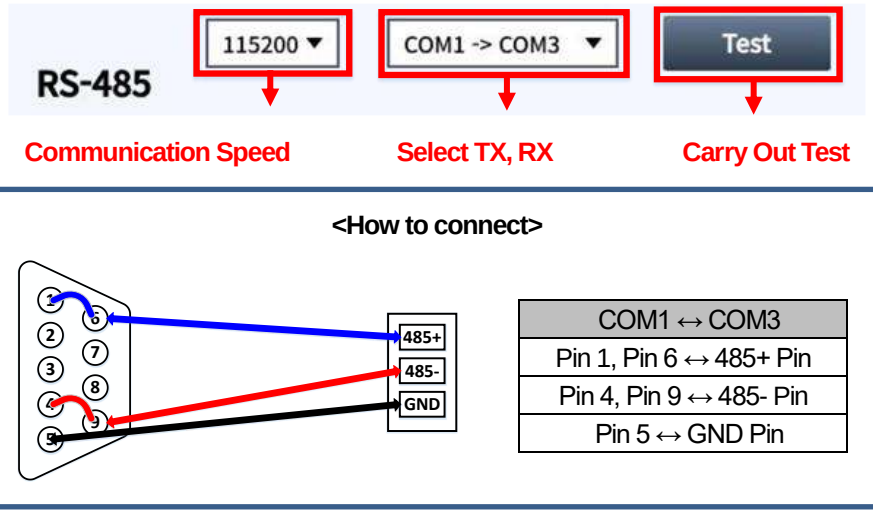
5.4.2 Network

Ethernet ping test and serial communication by COM port can be diagnosed.

Name	Description
Ethernet	When touching LAN0 or LAN1 to be diagnosed, the IP input pop-up window is displayed  When entering the Ethernet communication destination IP and touching the Done button, communication diagnosis can be performed.

<table>
<tr>
<td rowspan="3">Serial</td>
<td>RS-232</td>
<td>The RS-232 serial test can be performed by connecting COM1 port and COM2 port.
 

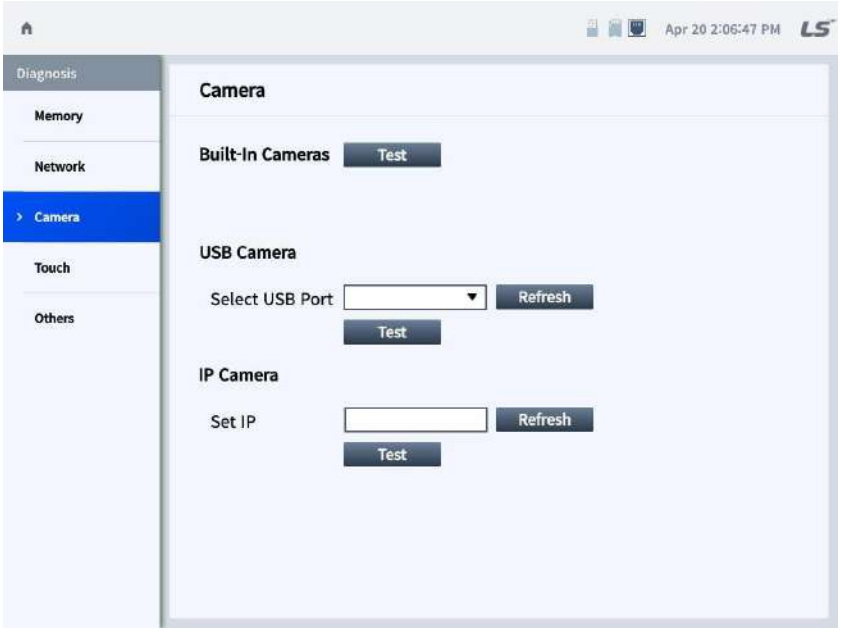
<table>
<tr><th>COM1 ↔ COM2</th></tr>
<tr><td>Pin 2 ↔ Pin 3</td></tr>
<tr><td>Pin 3 ↔ Pin 2</td></tr>
<tr><td>Pin 5 ↔ Pin 5</td></tr>
</table></td>
</tr>
<tr>
<td>RS-422</td>
<td>You can carry out the RS-422 serial test by connecting COM1 port and COM2 port.
 

<table>
<tr><th>COM1 ↔ COM2</th></tr>
<tr><td>Pin 1 ↔ Pin 6</td></tr>
<tr><td>Pin 4 ↔ Pin 9</td></tr>
<tr><td>Pin 6 ↔ Pin 1</td></tr>
<tr><td>Pin 9 ↔ Pin 4</td></tr>
</table></td>
</tr>
<tr>
<td>RS-485</td>
<td>You can carry out the RS-485 serial test by connecting COM1 port and COM3 port.
 

<table>
<tr><th>COM1 ↔ COM3</th></tr>
<tr><td>Pin 1, Pin 6 ↔ 485+ Pin</td></tr>
<tr><td>Pin 4, Pin 9 ↔ 485- Pin</td></tr>
<tr><td>Pin 5 ↔ GND Pin</td></tr>
</table></td>
</tr>
</table>

5.4.3 Camera

You can test the built-in camera, USB, and IP camera.



Notes

The Camera Diagnosis function is not currently supported. Support will be provided later

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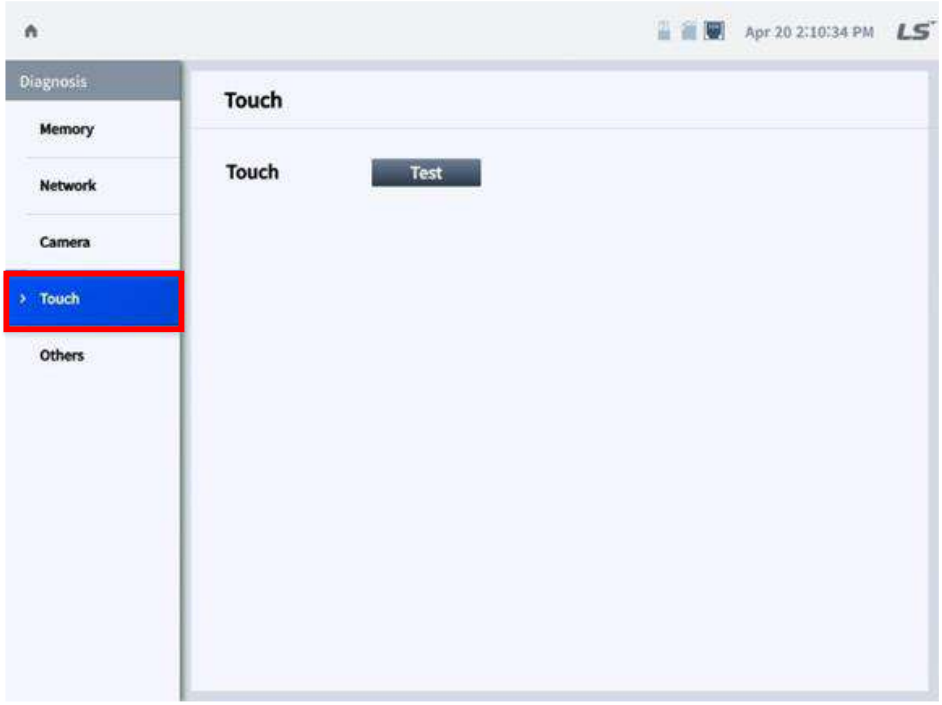
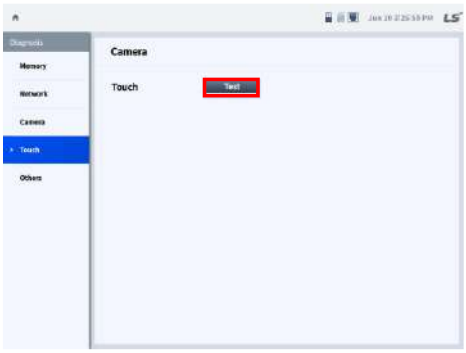
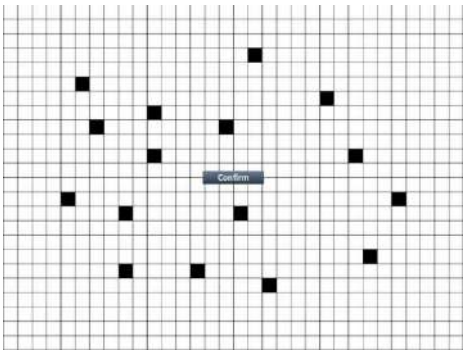
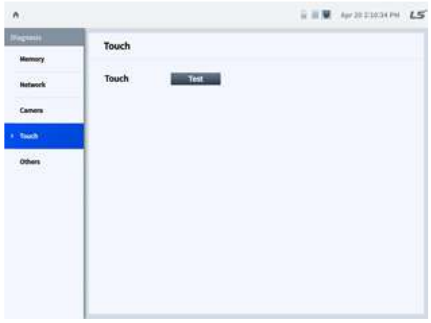
5.4.4 Touch

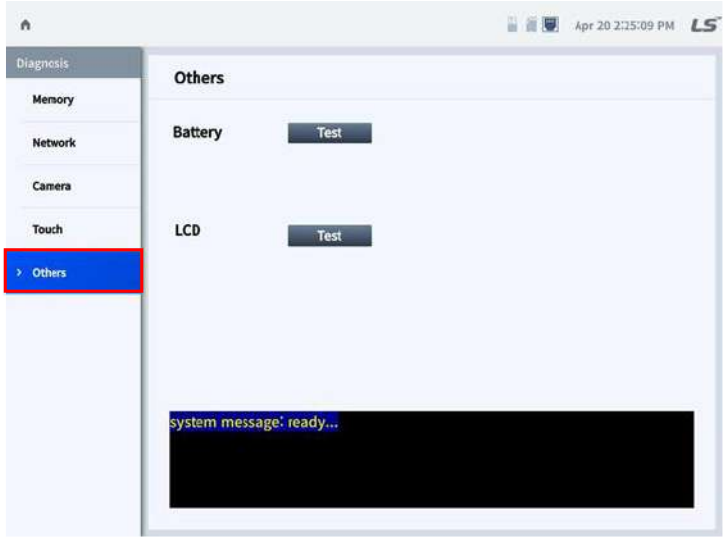
You can diagnose whether or not the recognition of the screen touch is bad.

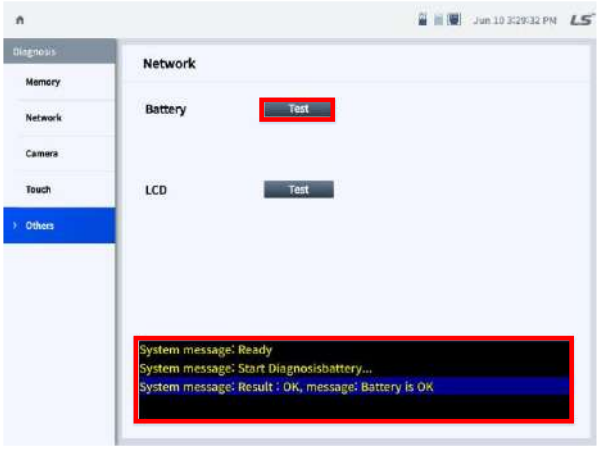
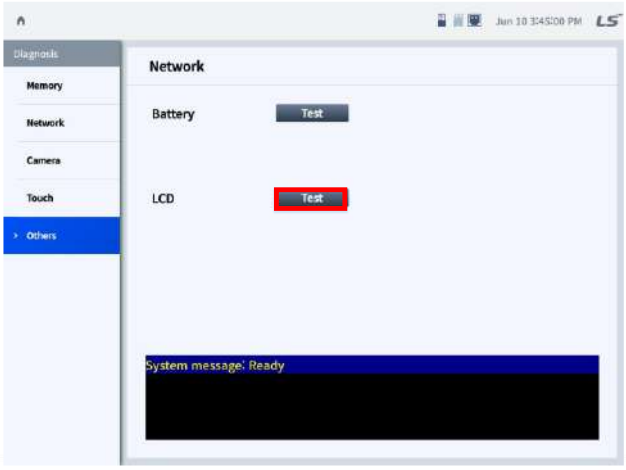


Name	Description
Touch Test	When touching the Test button, a number of check arrangement buttons appear.   Touch the button and perform the touch test.  If the test is completed, you can touch the Confirm button to return to the previous screen.

5.4.5 Others

You can diagnose whether or not the battery or LCD is abnormal.



Name	Description
Battery Test	When touching the Test button, The result message is appeared at the bottom output window. 
LCD Test	When touching the Test button, The display device test will be started. 

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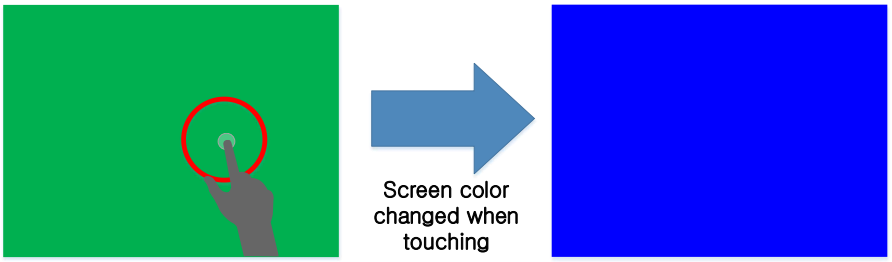
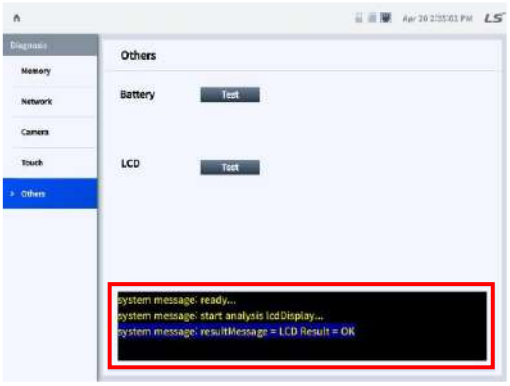
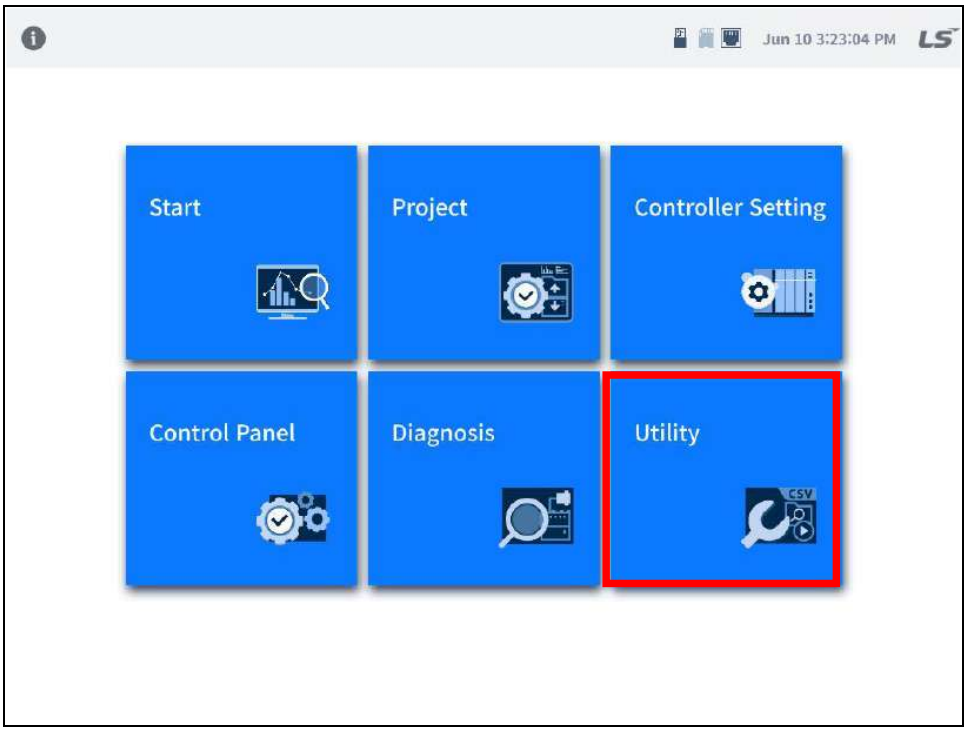
	The screen changes in the order of Red → Green → Blue → Black → White. When changing, you can touch the screen to move to the next color.  If the screen color change is completed, a screen asking if there is an abnormality appears. Depending on whether or not an abnormality exists, when you touch the button, it returns to the Others screen of Diagnosis, and the result message is displayed in the output window. 

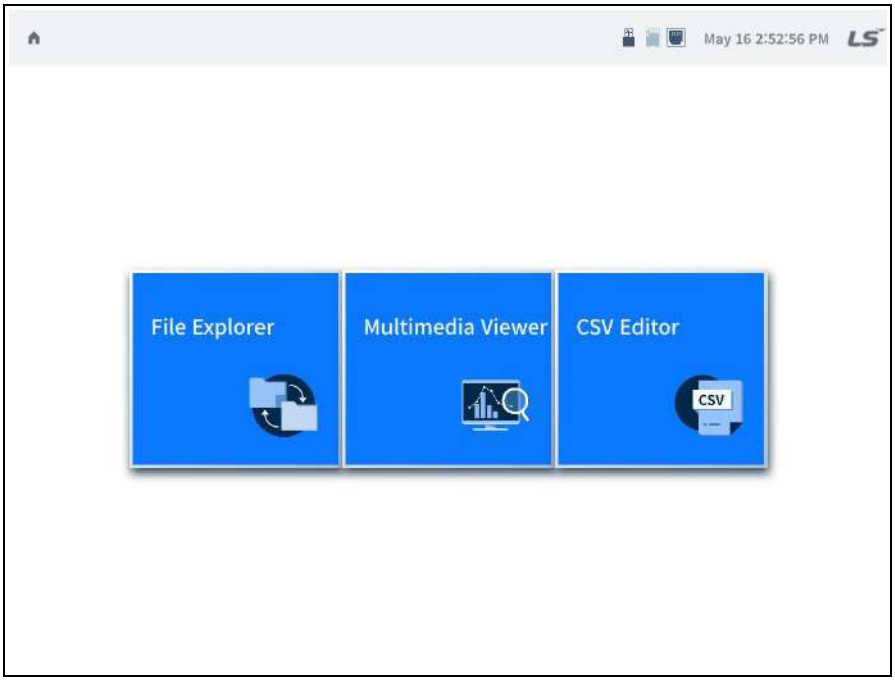
5.5 Utility

You can use additional functions (file explorer, multimedia viewer, CDV editor).



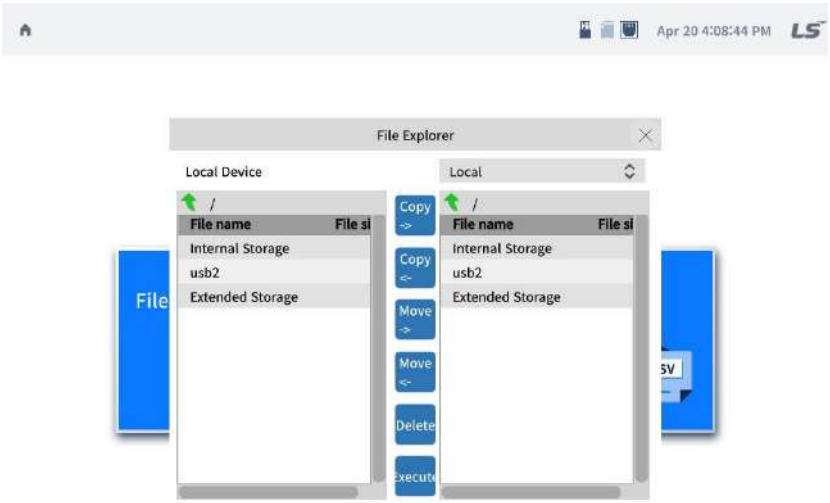
[XGT Panel Default Screen]

When you touch Utility, the screen is switched to the menu screen where you can run File Explorer, Multimedia Viewer, and CSV Editor.

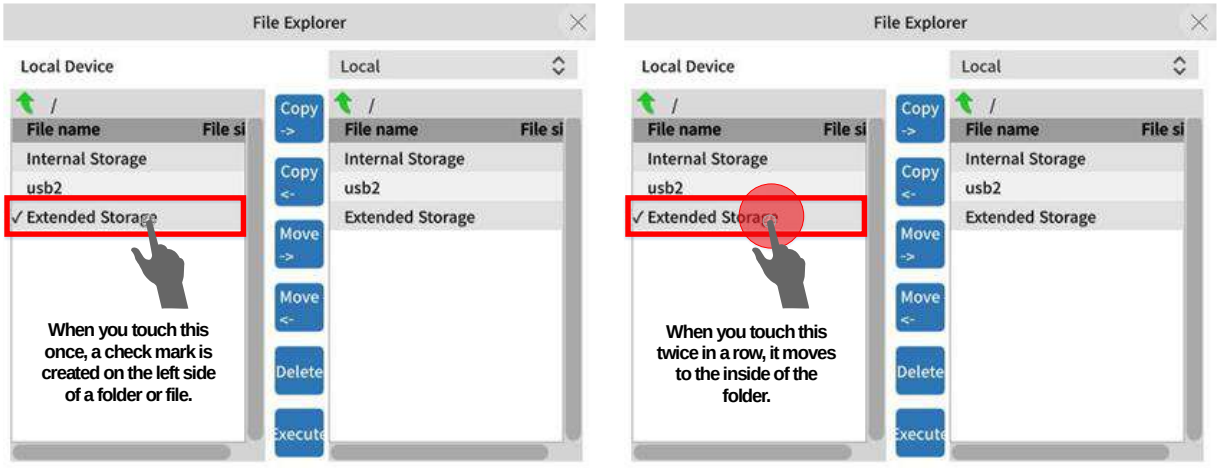


5.5.1 File Send

You can copy, move, delete, and execute files.



*** The local directory is displayed on the left side of the file explorer screen, and you can select local and remote directories on the right side.**



Name	Description
Copy	Copies the folder or file you have checked.
Move	Moves the folder or file you have checked.
Delete	Deletes the folder or file you have checked. (This is available only in the left local directory.)
Execute	Executes the folder or file you have checked. (This is available only in the left local directory.)

5.5.2 Multimedia Viewer

Notes

The Multimedia Viewer function is not currently supported. The function is expected to be supported within the year.

5.5.3 CSV Editor

Notes

The CSV Editor function is not currently supported. The function is expected to be supported within the year.

Chapter 6 Maintenance

To keep the XGT Panel in the best condition, perform regular inspections.

6.1 maintenance and inspection

Periodic inspection is necessary as the device may be affected by the surrounding environment. 1-2 times every 6 months. Please refer to the items below for the items to be checked.

Maintenance category		Criterion	Action
Power		within the power fluctuation 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	-10 ~ + 50°C	Modify the operating temperature and humidity to be proper
	Operating Humidity	10 to 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.
Gasket installation status		No gap between the gasket and panel	Replace gasket or affix brackets firmly
Gasket status		No deterioration or damage	Replace gasket
Front Panel status check		No deterioration or damage	Use a dry cloth to remove dust and foreign matter

6.2 Daily Maintenance

The following checks should be carried out on a daily basis.

check list	Check contents	Criterion	
Panel attachment status	Check the bracket	Should be mounted firmly	
Power terminal status	Unwinding of the power terminal screw	There will be no loosening	
	Proximity between compressed terminals	Should be at an appropriate distance	
Communication connector status	Unwinding of fixed screw	There will be no loosening	
Indication LED	light confirmation	Blue LED should be turned on	
Touch panel surface condition	Check the touch panel	No contamination such as water drops or oil	

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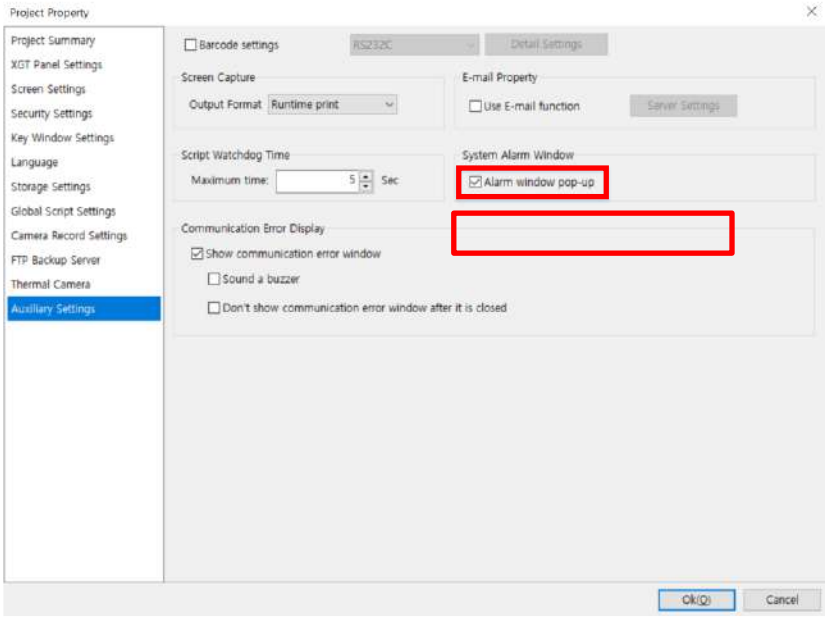
6.3 Periodic Maintenance

Inspect the following items once or twice every 6 months and take necessary measures.

check list		How to check	Criteria	action
Surrounding environment	Surrounding temperature	Measured by temperature/hygrometer Corrosive gas measurement	-10 to 50 °C	
	Surrounding humidity	10 to 85%RH	10 to 85%RH	
	Surrounding Pollution Degree	No vibration	No Corrosive gas	Use vibration-proof rubber or Find other anti-vibration measures
XGT Panel Status	Unwinding, swing	Move XGT Panel	Should be firmly attached	XGT Panel status
	Dust and foreign matter adhesion	Visual inspection	No attachment	
Connection status	Loosening of screws	Retighten screw with a screwdriver	Should be no loosening	
	Reducing the distance between compressed terminal	Visual check	Should be adequately spaced	
	connector loosened	Visual check	Should be no loosening	
	Bracket loosened	Retighten screw with a screwdriver	Should be no loosening	
Power voltage maintenance		Power from the power input terminal voltage using a tester Confirm	DC: 24V	Change the supply power
Battery		Check battery replacement time, voltage drop indication (indicated as a system alarm)	Check total outage time and warranty period check Should be np Battery voltage drop indication	Exchange low battery indicator Even after the warranty period
LCD backlight check		Visual check	Check the warranty period	Substitute Backlight when an error occurs
Touch state	Wrong touch position	Check in Diagnosis of XGT Panel	The touch position should be correct	touch state
	Bad touchpad	Visual check	Should be no broken or scratched/dirty	

Notes

(1) Battery replacement time is indicated by a system alarm. system alarm is displayed only when an alarm item in LXP - Designer is set.



(2) Replace the battery only with Hitachi Maxel (part number CR2032). There is a risk of fire or explosion if other batteries are used. Please refer to the user manual for safety instructions.

⚠ warning : Batteries may explode if mistreated. Do not charge, disassemble or dispose of in fire.

(3) As the iXP2 model has the integrated LCD and backlight, the LCD should be replaced when the life is over or it is out of order.

(4) Please wipe with a wet towel as a method to prevent ESD

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Chapter 7 EMC Standard Certification

7.1 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.

7.1.1 CE standard Certification

In case of XGT Panel, the EN61000-6-4, EN61000-6-2, EN61000-3-2, and EN61000-3-3 of CE standards were applied.

standard		result
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 NT
Voltage Change, Fluctuations and Flicker	EN61000-3-3:2008	NA NT
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 C
C=Conform NC=Not Conform NT=Not Tested NA=Not Applicable		

Directive:

Electromagnetic Compatibility Directive 2014/30/EU amended by the Directive 93/68/EEC

CE

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7.1.2 KC standard Certification

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

Class A device

This device is a device registered for electromagnetic compatibility for business use, so the seller or user
Please be aware of this and if it is sold or purchased by mistake ,
Please exchange.

7.2 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

7.2.1 Standard Certification for XGT Panel

XGT Panel is according to the EN61131-2:2007 (stability of device used in the measure, control laboratory).

7.2.2 Selection of XGT Panel

(1) L XP- M xxD
I/O modules with a DC 24V rating or less are out of the low voltage command target range.

Appendix 1 Troubleshooting

1. Type of Problem

During XGT Panel operation, display of displayed figures and objects, and downloading from L XP- Designer , etc. occur in XGT Panel.
We have categorized the types of problems. Please refer to the relevant problem section below.

Classification of problem	Description
Problem when starting	Malfunction when starting. ☞**Please refer to the 2. Problem when starting.**
Problem after the monitor on	In case that there is no reaction when touching. ☞ **Please refer to the 3. Problem after the Monitor on.**
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.**
USB Removal of Memory Card	In case that USB device is not working for a while when USB memory is removed. ☞ **Please refer to the 6. USB Removal of Memory Card**
External memory recognition problem	If external storage device such as USB, SD card is not recognized ☞ **Please refer to the7. External Memory Recognition.**
Touch recognition problem	If the touch is not recognized normally ☞ **Please refer to the 8. Touch recognition.**
Error message when executing program	In case that an error message occurs when operating the XGT Panel. ☞ **Please refer to the 9. Error message when executing program.**

2. Problems when Starting

Questions	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.

<Cause>

(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 No. 3 switch at DIP switch in the back of the device is in B direction or not.
When the power LED color of the Display unit or Main unit change?
Please check the following:

Display color	Contents
Blue	Power is supplied to XGT Panel.

Questions	When applying the option, 'Go to Screen after boot up', it displays "Failed to load image files" as the monitoring has not been started.
phenomenon	After storing images in the USB storage device and then selecting the option "Go to Screen after boot up" in the start menu, in case when re-permitting the power of the equipment, the message like "Failed to load image files" is displayed and the monitoring is not started.

<Cause>

(1) In case when it is connected with the USB storage device, the recognition of the USB is delayed.

<Solution>

(1) In case when the recognition speed is delayed due to the characteristics of the USB storage device, remove the USB storage device and then reinstall it.

Questions	When the power is re-permitted, the USB storage device (or USB mouse) is not recognized.
phenomenon	When the USB storage device was initially installed, it was normally recognized. However, it is not recognized after the power is re-permitted.

<Causes>

(1) Due to the option of the 'Reset USB Power' of the equipment, there could problems in the recognition process.

(2) Depending on the USB storage device, it may not be smoothly recognized.

<Solution>

(1) If the power initialization option ("Reset USB Power") of the equipment is selected, cancel the selection and then permit the power again. The "Reset USB Power" option is an additional function to improve the

initialization of the storage device with slow recognition speed or low recognition ratio. Depending on the characteristics of the storage device, however, the power initialization can be an obstacle to the initialization work. Thus, depending on Phenomenon, select what has higher recognition ratio by properly using the power initialization option.

(2) Depending on the characteristics of the storage device, it may not be recognized. Use another USB storage device showing higher recognition ratio.

3. Problems after the monitor on

Questions	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.

<Cause>

(1) Conductive objects such as cables, water, and oil may cause touch malfunction.

(2) The touch panel may be malfunctioning.

<Solution>

(1) Be careful not to let the cable touch the screen.

(2) It should be used to prevent foreign substances such as water, oil, etc. If foreign substances are attached, wipe it immediately

(3) If it is not possible to enter the settings menu, connect your mouse to a USB port to enter.

Questions	I can't hear the buzzer .
phenomenon	I can't hear the buzzer even when I press the switch

<Cause>

(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 [manual Ch.5.3.5 Sound].

(2) After setting to use buzzer, check whether the buzzer sounds or not in the 1)’s setting windows.

Questions	A system alarm occurs indicating that the system memory is insufficient.
phenomenon	After the system alarm about the lack of system memory occurs, XGT Panel itself closes the monitoring and then moves to the start menu in unspecific time without user’s operation.

<Cause>

(1) The memory usage could be exceeding 95%.

(2) The memory usage can be a bit increased when floating pop-up windows or moving to several screens

during monitoring. In case when the number of image used for project is a lot, the memory usage can more easily reach the limit. In this case, XGT Panel closes the monitoring by itself and then takes an action to secure the memory again.

<Solution>

(1) In case of using vector image instead of raster image, the memory share can be reduced. In the graphic library of LXP-Designer, the image group marked as OOO_R is the raster image group while the image group marked as OOO_V is the vector image group.

(2) In case when the monitoring is closed down due to the increase of the memory share in spite of the image change operation, contact the A/S center close by.

Questions	After continuously adding projects to the screen, and adding/editing objects, the operation speed has been slowed down.
phenomenon	After adding projects to the screen and also adding/editing objects, it feels like the operation speed of XGT Panel gets slowed down.

<Cause>

(1) The amount of image used for projects is big.

(2) In order to increase the screen operation speed, XGT Panel maintains the used images in the memory in advance. Since the memory resource has limitation, they cannot be maintained in the memory once the amount of image exceeds a certain limit. Whenever they are needed, thus, they are read from the file system and then expressed on the screen. This could be the reason why the screen operation speed gets slowed down.

<Solution>

(1) In case of using vector image instead of raster image, the memory share can be reduced. In the graphic library of XP-Builder, the image group marked as OOO_R is the raster image group while the image group marked as OOO_V is the vector image group.

(2) In case when there is no proper vector image, the desired image can be composed by using various functions of figures (circle, square, straight line and etc.).

(3) Removing unnecessary background screen, the screen is composed by applying the background colors.

4. Problems with figure and object display

Questions	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.

<Cause>

(1) 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.

Object type	Phenomenon
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.
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.

Questions	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)

<Cause>

(1) This is a phenomenon that occurs when the value is larger than the number of digits set or when the displayed value is data other than BCD after setting to 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.

Questions	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

<Cause>

(1) 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 is 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.

Question	The folded object doesn't sequentially show up
Phenomenon	The number under the data list shows up above data list.

< Cause >

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

<Solution>

(1) It is 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.

Question	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.

< Cause >

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

<Solution>

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

5. Communication problems

Question	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.

< Cause >

(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.

Question	It seems that communication doesn't work.
Phenomenon	Communication doesn't work.

< Cause >

(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) In case of Ethernet, make sure that the IP and port settings for the other PLC are correct.

Question	It seems that communication doesn't work.
Phenomenon	Ethernet communication is connected slowly after monitoring starts.

< Cause >

(1) Subnet of Ethernet port is the same.

<Solution>

(1) If the subnets of the two Ethernet ports are the same, the initial connection may be delayed due to the seek time.
(2) If possible, remove the Ethernet port's subnet.

Caution

► Before trial operation of the product, be sure to check if a normal communication is available between XGT Panel and the subject device of control

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6. Remove the USB memory card

Question	When removing the USB memory equipment, device is stopped for some times.
Phenomenon	This happens when doing data backup including logging, recipe.

< Cause >

(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.

(3) In case of USB memory, please remove it when the LED of USB external memory is not flickering.

Question	After the repeated attachment/detachment of the USB storage device, it is not recognized
Phenomenon	It can happen when the attachment/detachment of the USB device is repeated for a short period of time.

<Cause>

(1) When the USB device is recognized or removed, it takes a certain period of time(maximum a few seconds) to recognize it. When the storage device is quickly installed/removed, however, it cannot be normally recognized.

<Solution>

(1) It is recognized again after waiting for about a minute. Install it again after waiting for more than a minute.

(2) When removing/reinstalling the USB device, reinstall it after waiting for around 2-3 seconds.

Caution

► If you force to remove the data during the storage of data in the external memory, file may not be stored in a normal condition or external memory may suffer from damage.

7. External memory recognition

Question	USB, SD Card not recognized.
Phenomenon	The USB or SD card is inserted but the unit does not recognize it.

<Cause>

(1) It appears when the USB memory or SD card is partitioned.

<Solution>

(1) Please format USB memory or SD card as one partition.

Caution

► If you forcefully remove the data from the external memory while it is being saved, the file may not be saved properly or the external memory may be damaged.

8. Touch recognition

Question	It recognizes that you have touched a place you do not want.
Phenomenon	The place where I did not touch was touched.

<Caution>
(1) Check the surface of the touch panel for foreign matter such as water or oil.
(2) Check if the power or communication cable is passing on the surface of the touch panel.

<Solution>
(1) Clean the surface of the touch panel using a dry cloth or a towel
(2) When cleaning the surface of the touch panel, be sure to turn off the power to prevent malfunction
(3) Be careful not to let cables run near the touch panel

Questions	I touched the screen, but it is not recognized.
phenomenon	After configuring the network through Ethernet communication, the screen is touched, but the touch is not recognized or the screen temporarily stopped.

<Cause>
(1) Check if communication with the other device is normal.
(2) It may be caused by a lack of internal resources due to traffic congestion caused by poor communication equipment.

<Solution>
(1) After configuring a 1:1 network between HMI and other device (PLC), check if communication is normal .
(2) If a problematic product occurs during 1:1 configuration, please ask the manufacturer for confirmation.

Caution

► The electrostatic touch panel may cause malfunction if liquids such as water or oil get on the surface.
► If you need to clean the unit, be sure to turn off the power before cleaning.

9. Error message during program execution

When a problem occurs during the execution of XGT Panel, such as device startup, device diagnosis and environment setting, project download, and controller monitoring, an error message is displayed in the form of a message box. In this case, the message always displays a four-digit code before this content. In this case, the first two characters are the code of the object and the operation being performed, and the last two digits are the message number. That is, if the code of the currently generated error message is displayed as [0101], it is an error message that occurred when diagnosing the state of NVRAM.
an error message occurs, refer to the type and sequence of the error code column below to find the cause and countermeasure .

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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
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, 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			

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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.
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

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
					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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
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 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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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.

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Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
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.
		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.

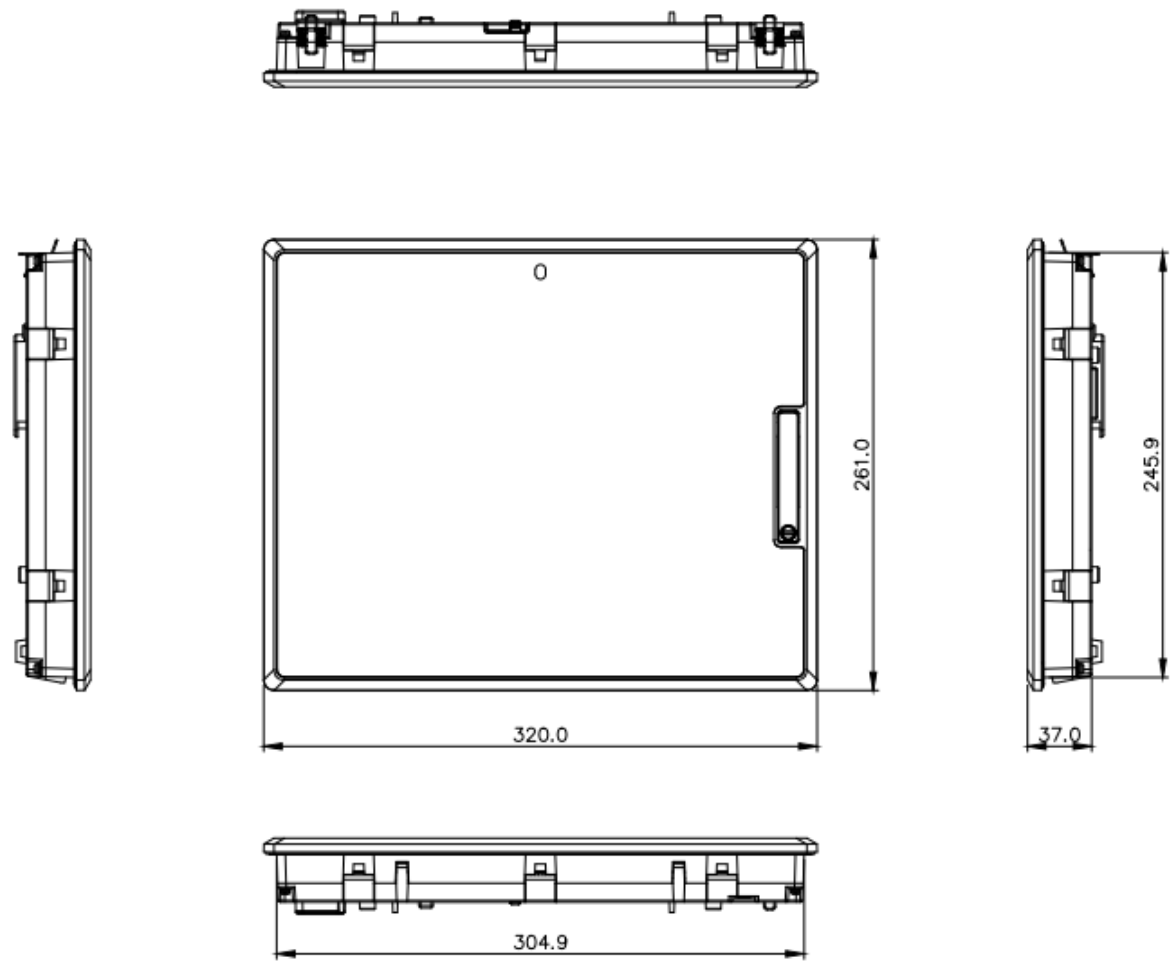
Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		0x28	XGT Panel	Failed to Start Engine. Please update engine again.	To reboot the engine is not available because of wrong file which is developed by downloading wrong module or communication error. Touch \\FlashDisk\LSISProduct\Update.exe 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.
		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.

Object	Error code		Occurrence location	Error message	Reason and measure
	Type	Address			
		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.

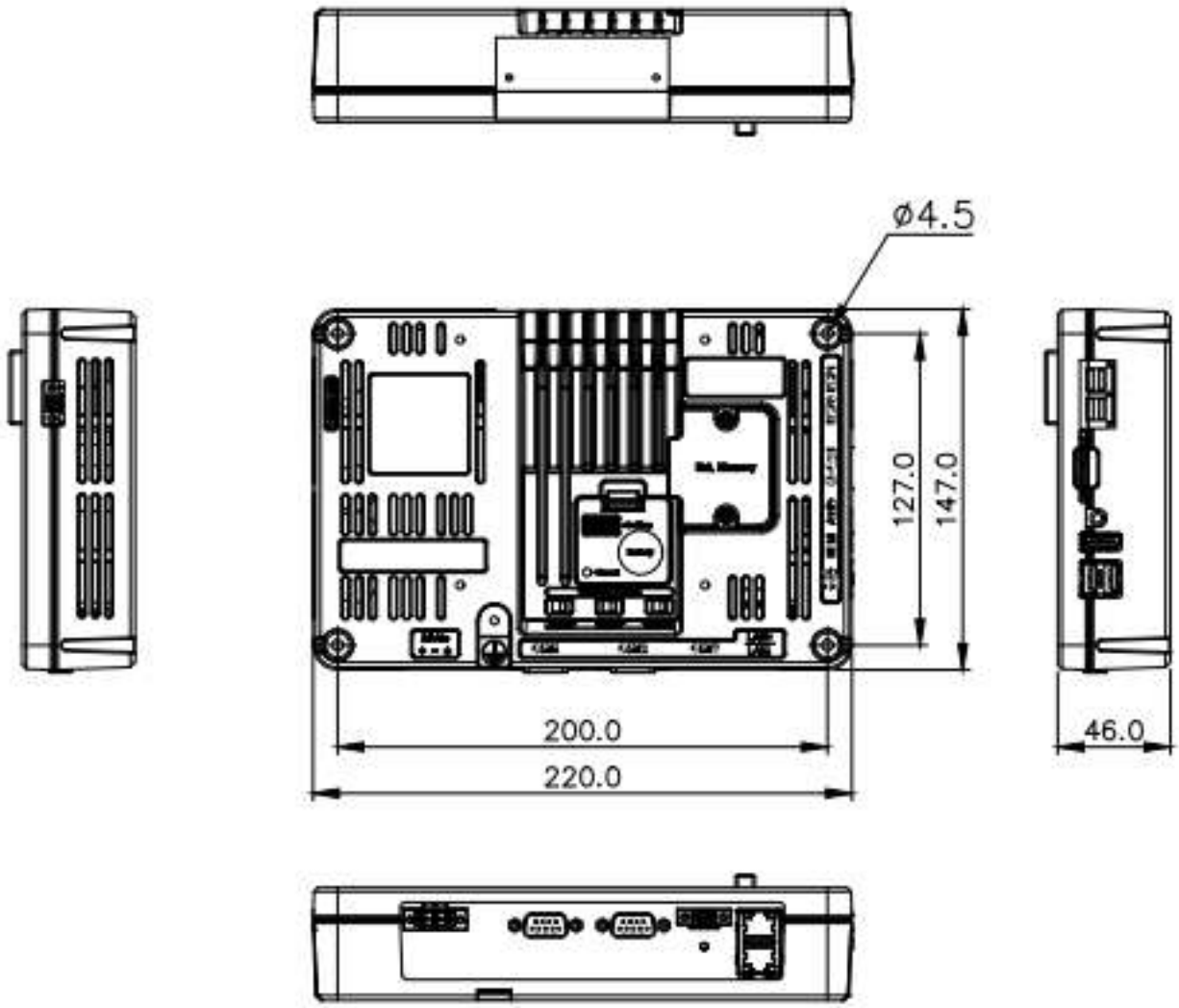
Appendix 2 Appearance size

Unit: mm

1 . LXP-D12xx



2 . LXP- MxxD



Appendix 3 Warranty details and environmental policy

1. Warranty

1. Warranty period
   The warranty period for the purchased product is 18 months from the date of manufacture.

2. Warranty Coverage
   Partial replacement or repair may be provided for any failure occurring during the warranty period above.
   However, please note that the following cases are excluded from the scope of the warranty .

   (1) In case of improper condition, environment, or handling other than those specified in the instruction manual
   (2) If the cause of the failure is something other than our product
   (3) In case of remodeling or repair in a place other than the company and the designated point set by the company
   (4) In case the product is not used in its original way
   (5) In case of reasons that cannot be predicted at the level of science and technology at the time of shipment from our company
   (6) In case the company is not responsible for other natural disasters or fires

3. The above guarantee means only the HMI unit, so please consider safety when configuring the system or applying the product.

2. Environmental Policy

LS ELECTRIC is following the environmental policy as follows.

Environment

LS ELECTRIC
As a management priority,
All employees have a pleasant environment
Do my best to

Product Disposal Guide

LS ELECTRIC HMI can protect
the environment
It is designed to be a product.
If the product is discarded, it can be recycled
by separating it into aluminum, iron or
synthetic resin(Cover).

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