LS

Programmable Logic Controller   Installation Guide
Smart I/O   **XEL-BSSRT/F/H**

This installation guide provides simple function information or PLC control. Please read carefully this data sheet and manuals before using products. Especially read precautions then handle the products properly.

1   Safety Precautions

■ Meaning of warning and caution label

⚠ **WARNING**	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury
⚠ **CAUTION**	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices

⚠ WARNING

① Do not contact the terminals while the power is applied.
② Be sure there are no foreign metallic matters.
③ Do not manipulate the battery(charge, disassemble, hitting, short, soldering).

⚠ CAUTION

① Be sure to check the rated voltage and terminal arrangement before wiring
② When wiring, tighten the screw of terminal block with the specified torque range
③ Do not install the flammable things on surroundings
④ Do not use the PLC in the environment of direct vibration
⑤ Except expert service staff, Do not disassemble or fix or modify the product
⑥ Use the PLC in an environment that meets the general specifications contained in this installation guide.
⑦ Be sure that external load does not exceed the rating of output module.
⑧ When disposing of PLC and battery, treat it as industrial waste.
⑨ I/O signal or communication line shall be wired at least 100mm away from a high-voltage cable or power line.

2   Use of environment

■ To install, observe the below conditions.

No	Item	Specification				Standard
1	Ambient temp.	0 ~ 55℃				-
2	Storage temp.	-25 ~ 70℃				-
3	Ambient humidity	5 ~ 95%RH, non-condensing				-
4	Storage humidity	5 ~ 95%RH, non-condensing				-
5	Vibration Resistance	Occasional vibration				-
		Frequency	Acceleration	Amplitude	Number	IEC 61131-2
		5≤f<8.4㎐	-	3.5mm	10 times in each direction for X, Y, Z	
		8.4≤f≤150㎐	9.8㎨(1g)	-		
		Continuous vibration				
		Frequency	Acceleration	Amplitude		
		5≤f<8.4㎐	-	1.75mm		
		8.4≤f≤150㎐	4.9㎨(0.5g)	-		

3   Applicable Version

■ For system configuration, the following version is necessary.
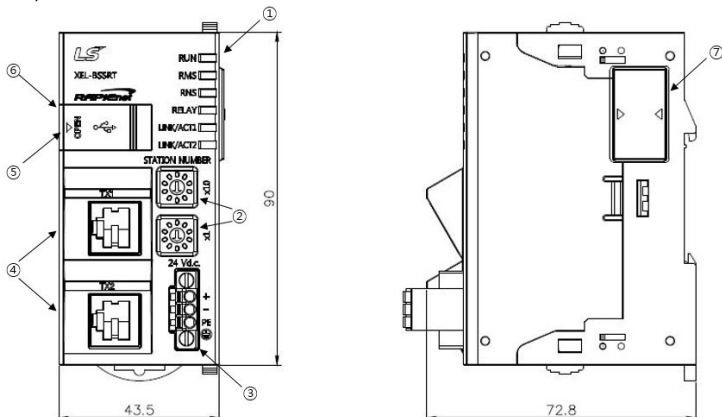1) XG5000 Software   : V4.30 or above

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■ For more information, please refer to user manual.

Item	Specification
Communication protocol	RAPIEnet, EtherNet/IP, Modbus-TCP, BOOTP, DHCP
Transmission speed	100/1000Mbps
Communication cable	Electric: S-FTP over CAT5e / Optical: Multi-mode/Single-mode fiber optic cable(MMF/SMF)
Maximum expansion stages	8 slot
Output current	3.0A[1]
Internal current consumption	BSSRT: 710㎃, BSSRF: 750㎃, BSSRH: 730㎃

[1] Be careful that the sum of the current consumption does not exceed the output current.

5   Parts name and Dimension (mm)

■ This is front part of the product. Refer to each name when operating the system. For more information, refer to user's manual.

■ Parts name and function

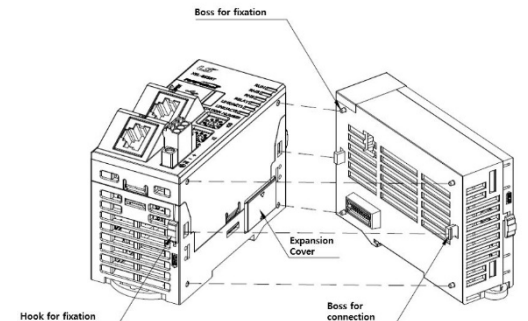| No.	Name	Description
①	Status LED	RAPIEnet/IP Adapter operation status LED, Network communication status LED
②	Rotary Switch	Node Address switch
③	Power connector	DC24V power input connector
④	Media connector	Media connector (electric, optical)
⑤	USB connector	USB connector to connect with XG5000
⑥	USB protection cover	Protection cover for USB connector
⑦	Expansion cover	Protection cover for expansion connector

■ LED details

LED	Status	Description
RUN	Off	Power Off
	Green On	Master module is RUN
	Red On	Master module is STOP
	Green Blink	Waiting for service
RMS	Green On	Normal
	Green Blink	Devices setting is not complete
	Red On	Non-restorable error occurs
	Red Blink	Invalid setting, Restorable error occurs, Parameter errors, Initialization errors, Different speeds or duplexes between ports
RNS	Green On	At least one connection
	Green Blink	Device is not connected
	Red On	Duplicated IP address/station number is detected
	Red Blink	Time-out occurs with one or more devices / Frame error or heartbeat error occurs
RELAY	Off	Relay Off
	Green On	Relay On
LINK/ACT1 LINK/ACT2	Off	Link=No, Activity=NA
	Green On	1G Link=Yes, Activity=No
	Green Blink	1G Link=Yes, Activity=Yes
	Yellow On	10/100M Link=Yes, Activity=No
	Yellow Blink	10/100M Link=Yes, Activity=Yes

6   Mounting & Installation

■ Here describes the method to attach each module to the base or remove it.
1) Attachment of product
① When extension input/output module is installed, pull two levers of adapter module up.
② Push the product and connect it agreement with hook for fixation of four edges and hook   for connection
③ After connection, get down the hook For fixation and fix it completely
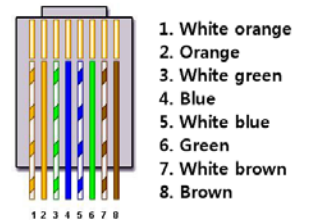2) Detachment of product
① Push up the hook for disconnection.
② Detach the product with two hands. (Don't force it.)

7   Wiring

■ Installation of cable
1) 100/10000BASE-TX's max.extended length between nodes is 100m.
2) This module provides Auto Cross Over function so the user can use both cross and straight cable.

Pin No.	Sign	Cable wiring	
		Straight cable	Cross cable
1	TD+	1 ----- 1	1 ----- 3
2	TD-	2 ----- 2	2 ----- 6
3	RD+	3 ----- 3	3 ----- 1
4	TRD2+	4 ----- 4	4 ----- 7
5	TRD2-	5 ----- 5	5 ----- 8
6	RD-	6 ----- 6	6 ----- 2
7	TRD3+	7 ----- 7	7 ----- 4
8	TRD3-	8 ----- 8	8 ----- 5

1. White orange
2. Orange
3. White green
4. Blue
5. White blue
6. Green
7. White brown
8. Brown

8   Warranty

■ Warranty period
18 months after the production date.
■ Scope of Warranty
18-month warranty is available except:
1) The troubles caused by improper condition, environment or treatment except the instructions of LS ELECTRIC.
2) The troubles caused by external devices
3) The troubles caused by remodeling or repairing based on the user's own discretion.
4) The troubles caused by improper usage of the product
5) The troubles caused by the reason which exceeded the expectation from science and technology level when LS ELECTRIC manufactured the product
6) The troubles caused by natural disaster
■ Change in specifications
Product specifications are subject to change without notice due to continuous product development and improvement.