XBL-C21A
Programmable
Logic Controller

LS XBL-C21A Programmable Logic Controller Instruction Manual

Contents

LS XBL-C21A Programmable Logic Controller

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.

Safety Precautions

Meaning of warning and caution label

	**WARNING**	WARNING indicates a potentially hazardous situation which, if not avoided, c ould result in death or serious injury
	**CAUTION**	CAUTION indicates a potentially hazardous situation which, if not avoided, m ay 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 the terminal block with the specified torque range

③ Do not install flammable things in surroundings

④ Do not use the PLC in an environment of direct vibration

⑤ Except for expert service staff, Do not disassemble fix or modify the product

⑥ Use the PLC in an environment that meets the general specifications contained in this datasheet.

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.

Operating Environment

To install, observe the below conditions

<table>
<tr><td>No</td><td>Item</td><td colspan="5">Specification</td><td>Standard</td></tr>
<tr><td>1</td><td>Ambient temp.</td><td colspan="5">0 ~ 55℃</td><td>–</td></tr>
<tr><td>2</td><td>Storage temp.</td><td colspan="5">-25 ~ 70℃</td><td>–</td></tr>
<tr><td>3</td><td>Ambient humidity</td><td colspan="5">5 ~ 95%RH, non-condensing</td><td>–</td></tr>
<tr><td>4</td><td>Storage humidity</td><td colspan="5">5 ~ 95%RH, non-condensing</td><td>–</td></tr>
<tr><td rowspan="9">5</td><td rowspan="9">Vibration Resistance</td><td colspan="4">Occasional vibration</td><td>–</td><td>–</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td>Number</td><td rowspan="9">IEC 61131-2</td></tr>
<tr><td>5≤f<8.4</td><td>–</td><td>3.5mm</td><td rowspan="8">10 times in each direction for X, Y, Z</td></tr>
<tr><td>8.4≤f≤150</td><td>9.8 (1g)</td><td>–</td></tr>
<tr><td colspan="3">Continuous vibration</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Amplitude</td></tr>
<tr><td>5≤f<8.4</td><td>–</td><td>1.75mm</td></tr>
<tr><td>8.4≤f≤150</td><td>4.9 (0.5g)</td><td>–</td></tr>
</table>

Applicable Support Software

For system configuration, the following version is necessary.

1. XBC Series : SU(V1.5 or above), H(V2.4 or above), U(V1.1 or above)
2. XEC Series : SU(V1.4 or above), H(V1.8 or above), U(V1.1 or above)
3. XBM Series : S(V3.5 or above), H(V1.0 or above)
4. XG5000 Software : V4.00 or above

Accessories and Cable Specifications

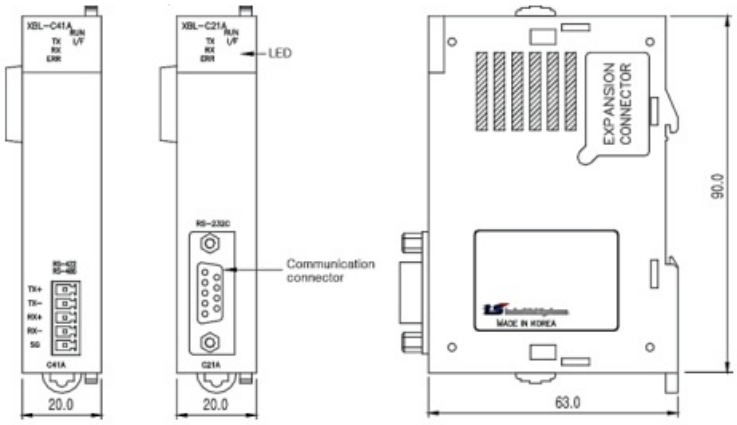
- Check the RS-232/485 Connector attached in the module. (XBL-C41A)
- Check terminal resistance contained in the box. (XBL-C41A)
    - Terminal resistance : 120Ω, 1/2W, allowance 5% (2EA)
- When using the RS-422 or RS-485 communication channel, twisted pair cable shall be used with consideration of communication distance and speed.
    1. Item : Low Capacitance LAN Interface Cable
    2. Type: LIREV-AMESB

3. Size : 2P X 22AWG(D/0.254 TA)
4. Manufacturer : LS Cable Co., Ltd
5. Electrical characteristics

Items	Unit	Characteristics	Condition
Conductor Resistance	Ω/km	59 or less	25℃
Withstanding Voltage (DC)	V/1min	500V, 1Min.	In air
Insulation Resistance	MΩ-km	1,000 or more	25℃
Capacity	Pf/M	45 or less	1kHz
Characteristic Impedance	Ω	120±12	10MHz

Parts name and Dimension (mm)

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



LED details

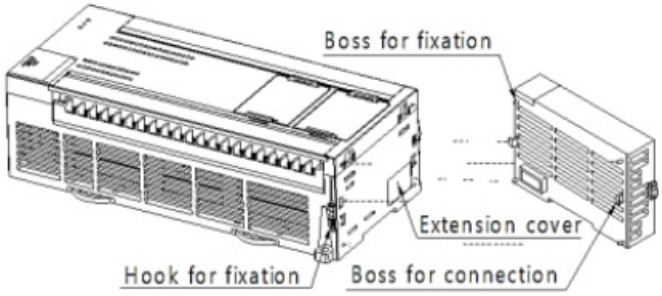
Name	Description	Status	LED Status Description
RUN	Cnet operation status	On	Normal operating
		Off	Abnormal operation of the Cnet I/F module

I/F	Interface status with CPU	On	Interface error with the CPU module
		Off	Communication module initialization error
		Blinks	Normal operating
TX	During frame transmission	On	During frame transmission
		Off	Frame transmission completed
RX	During frame receiving	On	During frame receiving
		Off	Frame receiving completed
ERR	Displays fame error	On	Frame error
		Off	Normal frame

Installing / Removing Modules

Here describes the method to attach each module to the base or remove it.

1. Installing module
    1. Eliminate the Extension Cover at the product.
    2. Push the product and connect it in agreement with Hook For Fixation of four edges and Hook\ For Connection.
    3. After connection, push down the Hook For Fixation and fix it completely.
2. Removing module
    1. Push up the Hook For Disconnection, and then detach the product with two hands. (Do not detach the product by force)



Wiring

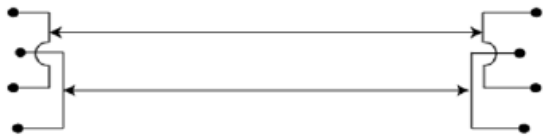
Wiring for Communication
RS-232C connector (modem connection)

Cnet(9-PIN)		Signal Direction	Modem(25-PIN)	
Pin No	Name		Name	Pin No.
1	CD	←	CD	8
2	RXD	←	RXD	3
3	TXD	→	TXD	2
4	DTR	→	DTR	20
5	SG	—	SG	7
6	DSR	←	DSR	6
7	RTS	→	RTS	4
8	CTS	←	CTS	5
9	RI	←	RI	22

2) RS-422 Connector for communication

Cnet(5-Pin)		Signal Direction (Cnet ↔ external device)	External comm. Device
Pin No	Name		
1	TX+	→	RX+
2	TX-	→	RX-
3	RX+	←	TX+
4	RX-	←	TX-
5	SG	—	SG

3) RS-485 Connector for communication

Cnet(5-Pin)		Signal Direction (Cnet ↔ external device)	External comm. Device
Pin No	Name		
1	TX+		RX+
2	TX-		RX-
3	RX+		TX+
4	RX-		TX-
5	SG		SG

For more information about wiring, refer to user manual

Warranty

- The warranty period is 36 months from the date of manufacture.
- The initial diagnosis of faults should be conducted by the user. However, upon request, LS ELECTRIC or its representative(s) can undertake this task for a fee. If the cause of the fault is found to be the responsibility of LS ELECTRIC, this service will be free of charge.
- Exclusions from warranty
    1. Replacement of consumable and life-limited parts (e.g. relays, fuses, capacitors, batteries, LCDs, etc.)
    2. Failures or damages caused by improper conditions or handling outside those specified in the user manual
    3. Failures caused by external factors unrelated to the product
    4. Failures caused by modifications without LS ELECTRIC's consent
    5. Use of the product in unintended ways
    6. Failures that cannot be predicted/solved by current scientific technology at the time of manufacture
    7. Failures due to external factors such as fire, abnormal voltage, or natural disasters
    8. Other cases for which LS ELECTRIC is not responsible
- For detailed warranty information, please refer to the user's manual.
- The content of the installation guide is subject to change without notice for product performance improvement.

contact

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Documents / Resources

	LS XBL-C21A Programmable Logic Controller [pdf] Instruction Manual XBL-C21A, C41A, XBL-C21A Programmable Logic Controller, XBL-C21A, Programmable Logic Controller, Logic Controller

References

- Electric | The Largest Consumer Energy & Renewables Platform
- LS ELECTRIC Co., Ltd.
- User Manual