

DATA SHEET

LS Programmable Logic Controller
FEnet(Fast Ethernet) I/F Module

XGB XBL-EMTA



- When using LSIS equipment, thoroughly read this datasheet and associated manuals introduced in this datasheet. Also pay careful attention to safety and handle the module properly.
- Store this datasheet in a safe place so that you can take it out and read it whenever necessary.



Davis Controls Ltd is the authorized distributor of LSIS equipment and control solutions throughout Canada.

Founded in 1933, Davis Controls represents a strong and balanced portfolio of world class products. From head office facilities located in Oakville, Ontario, Davis Controls connects customers seeking high quality automation solutions with global manufacturers of state of the art products.

You can contact us at:

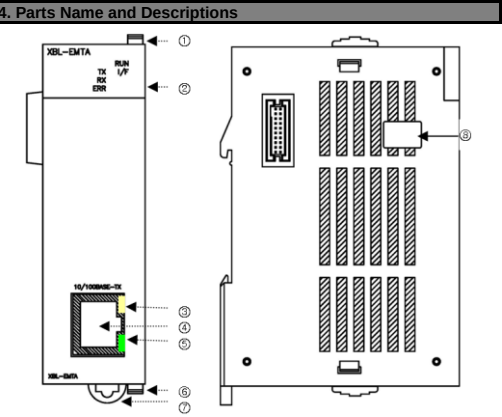
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Thank you for your business and your interest in LSIS solutions.

LS constantly endeavors to improve our products so that information in this datasheet is subject to change without notice.

The date of issue: 2011.5
10310000852 Ver 3.0

3. Cable Specifications		
(1) TP(UTP) cable (10/100Mbps)		
Item	Unit	Value
Conductor resistance(Max)	Ω/km	93.5
Insulation resistance(Min)	MΩ·km	2500
Voltage resistance	V/min	AC500
Characteristic impedance	Ω(1~100MHz)	100±15
Decrement	dB/100m or less	10MHz 6.5
		16MHz 8.2
		20MHz 9.3
		16MHz 47
Near-end crosstalk decrement	dB/100m or less	16MHz 44
		20MHz 42



Classification		Description	
①	Fixed Lever	For fixing the expansion module (upper part)	
		On Normal	
②	LED	RUN	Off Stop Run
		I/F	Blink Interface with CPU
			Off Stop interface with CPU
		TX	link Transmitting the data
			Off Stop transmitting the data
		RX	Blink Receiving the data
			Off No Receiving the data
		ERR	On H/W error
③	LINK LED (Yellow)	Off	S/W error
		Blink	Receiving the packet
④	RJ45 connector	Off	No receiving the packet
		Connection part of RJ45 connector	
⑤	SPEED LED (Green)	On	100Mbps operation
		Off	10Mbps operation
⑥	Fixed Lever	For fixing the expansion module (lower part)	
		For fixing the DIN rail	
⑦	Fixed Lever		
⑧	O/S Download Switch	All On	Normal operating
		All Off	OS Download Mode (If you want to OS Download, Please contact us)

Remarks	
1	Since 10/100 BASE-TX cable structure is weak in external noise, the cable of No.1 & 2 which are TD+ & TD- and No.3 & 6 which are RD+ & RD- shall be twisted respectively to be strong against noise.
2	Hub power shall be with countermeasures against noise as separated from PLC power.
3	The cable shall be installed min. 50 mm away from high current line such as power line, etc.
4	Contact an expert for terminal work, manufacture and installation of cable.

- Safety Precautions

 - 1) Safety Precautions is for using the product safely and correctly in order to prevent the accidents and danger, so please go by them.
 - 2) The precautions explained here only apply to this module. For safety precautions on the PLC system, refer to User's manual.
 - 3) The precautions are divided into 2 sections, 'Warning' and 'Caution'. Each of the meanings is represented as follows.
-  **Warning** If you violate instructions, it can cause death, fatal injury or a considerable loss of property

 **Caution** If you violate instructions, it can cause a slight injury or a slight loss of products

 - 1) The symbols which are indicated in the PLC and User's Manual mean as follows.
 This symbol means paying attention because of danger of injury, fire, or malfunction
 - 2) This symbol means paying attention because of danger of electric shock.
 Store this datasheet in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user
- Handling Precautions

 - 3) Don't drop or make impact.
 - 4) Don't detach PCB from case. It may cause problem.
 - 5) When wiring, let no foreign material go into the module. If it goes into the module, remove it.
 - 6) Don't detach the module from slot while power is on

**Warning**

2) Do not contact the terminals while the power is applied.
Risk of electric shock and malfunction.

3) Protect the product from being gone into by foreign metallic matter.
Risk of fire, electric shock and malfunction.

4) Risk of fire, electric shock and malfunction.
Risk of injury and fire by explosion and ignition.

**Caution**

7) Be sure to check the rated voltage and terminal arrangement for the module before wiring work.
Risk of electric shock, fire and malfunction.

8) Tighten the screw of terminal block with the specified torque range.
If the terminal screw is loose, it can cause fire and electric shock.

9) Use the PLC in an environment that meets the general specifications contained in this datasheet.
Risk of electrical shock, fire, erroneous operation and deterioration of the PLC.

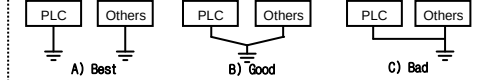
10) Be sure that external load does not exceed the rating of output module.
Risk of fire and erroneous operation.

11) Do not use the PLC in the environment of direct vibration
Risk of electrical shock, fire and erroneous operation.

12) Do not disassemble, repair or modify the PLC.
Risk of electrical shock, fire and erroneous operation

13) When disposing of PLC and battery, treat it as industrial waste.
Risk of poisonous pollution or explosion.

- Precautions for use

 - 1) Do not Install other places except PLC controlled place.
 - 2) Make sure that the FG terminal is grounded with class 3 grounding which is dedicated to the PLC. Otherwise, it can cause disorder or malfunction of PLC
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- 3) Connect expansion connector correctly when expansion module is needed.
 - 4) Do not detach PCB from the case of the module and do not modify the module.
 - 5) Turn off power when attaching or detaching module.
 - 6) Cellular phone or walkie-talkie should be farther than 30cm from the PLC.
 - 7) Input signal and communication line should be farther than 10cm from a high-tension and a power line in order not to be affected by noise and magnetic field.

Related Manual

Read this data sheet carefully prior to any operation, mounting, installation or start-up of the product.

Name	Code
XGB Hardware Manual	10310000693
XGB Hardware (IEC) Manual	10310001059
XBC Standard/Economic Manual	10310001091
XGK/XGB Instruction Manual	10310000510
XGI/XGR/XEC Instruction Manual	10310000833
XG5000 Manual	10310000821
XGB Fast Ethernet I/F Module User's Manual	10310000874

Revision History

Publication	Version	Description
2007.08.	V 1.0	The First Edition
2009.08.	V 2.0	Branch address changed
2011.05.	V 3.0	KOREAN/ENGLISH data sheet integrated CI Changed

Applicable version

For system configuration, the following version is necessary.

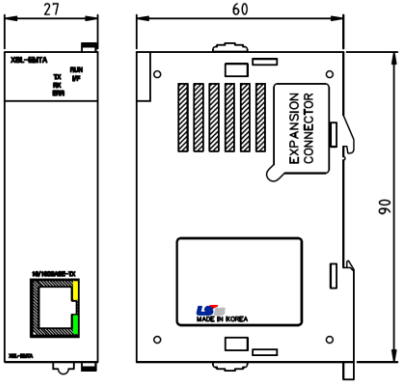
Item	Applicable version
XBC H Type	V2.02 or above
XBC S Type	V1.1 or above
XBC SU Type	V1.0 or above
XEC H Type	V1.1 or above
XGB Module Type(XBM)	V1.8 or above
XG5000	V3.1 or above

1. General Specifications			
No	Item	Specification	Standard
1	Operating temperature	0 ~ 55℃	-
2	Storage temperature	-25 ~ 70℃	-
3	Operating humidity	5 ~ 95%RH, non-condensing	-
4	Storage humidity	5 ~ 95%RH, non-condensing	-
5	Vibration resistance	For discontinuous vibration	-
		Frequency Acceleration Amplitude	times
		10sf / 57 Hz 57 sf±150 Hz 9.8ms ² (1G)	0.075 mm
		For continuous vibration	10 times in each direction for X, Y, Z
		Frequency Acceleration Amplitude	
6	Shocks resistance	• Max. impact acceleration : 147 ms ² (15G)	IEC61131-2
		• Authorized time : 11ms	
7	Noise resistance	• Pulse wave : Sign half-wave pulse (Each 3 times in X,Y,Z directions)	IEC61131-2
		Square wave impulse noise	AC: ±1,500V DC: ±900V
		Electrostatic discharge	Voltage: 4kV (Contact discharge)
		Radiated electromagnetic field noise	80 ~ 1,000 MHz, 10 V/m
		Fast transient /burst noise	Segment Power supply module Digital/analog input/output communication interface
8	Ambient conditions	No corrosive gas or dust	-
9	Operating height	2000m or less	-
10	Pollution degree	2 or less	-
11	Cooling type	Natural air cooling	-

2. Performance Specifications		
Items	Performance	
Transfer Spec.	Speed	10/100Mbps
	Transfer System	Base Band
	Max. extended distance of Station-to-Station	-
	Max. Segment Length	100m(Node-Hub)
	Max. Node No.	Able to link to 9 hub stages (Recommended)
	Node Interval	-
	Max. Protocol Vol.	512Byte
	Excess Method of Communication Range	CSMA/CD
	Frame Error Check	CRC16=X15+ X14+ X13+ ... + X2+ X+ 1
	Number of Max. Installation module	2
Basic Spec	Power Consumption	300mA
	Weight	71g
	Dimension	27mm *60mm *90mm

6. Cautions for system and network connection

 - (1) IP address should be different including this module.
If not, normal communication is not available.
 - (2) Set each exchange number differently for using HS link service.
 - (3) Use specified communication cable. Other cables may occur communication trouble.
 - (4) Check disconnection or short circuit of communication cable before installation.
 - (5) Do tighten communication cable connector.
 - (6) If cable connection is not stable, it may occur some severe trouble of communication.
 - (7) Wire communication cable separately from power supply line or inductive noise.
7. Dimension (mm)



8. Warranty

 - (1) Warranty period
LSIS provides an 18-month-warranty from the date of the production.
 - (2) Warranty conditions
For troubles within the warranty period, LSIS will replace the entire PLC or repair the troubled parts free of charge except the following cases.
(a) The troubles caused by improper condition, environment or treatment except the instructions of LSIS.
(b) The troubles caused by external devices.
(c) The troubles caused by remodeling or repairing based on the user's own discretion.
(d) The troubles caused by improper usage of the product.
(e) The troubles caused by the reason which exceeded the expectation from science and technology level when LSIS manufactured the product.
(f) The troubles caused by natural disaster.
(3) This warranty is limited to the PLC itself only. It is not valid for the whole system which the PLC is attached to.