FUTURING SMART ENERGY

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LSIS Automation Products

Programmable Logic Controller / Human Machine Interface / Servo Drive & Motor

LS IS

LSIS Automation Products

XGT Family

XGT PLC High performance

Rack type (XGR/XGK/XGI Series)

XGR: Redundancy system

- CPU processing speed: 42ns/step
- I/O point: max. 131,072
- Total memory: 25MB (Program 7MB, Data 2MB, Flash 16MB)
- Switching over time: min. 4.3ms/max. 22ms
- Built-in 256 PID loops control

XGR

XGK: Ladder programming

- CPU processing speed: 8.5ns/step
- I/O point: max. 6,144
- Various types of CPU E/S/A/H/U/SN/HN/UN (16K/32K/32K/64K/128K/64K/128K/256K)
- Integrated intelligent software package: XG5000
- System solution based on Open network: Ethernet, Profibus-DP, DeviceNet
- PID control
- Built-in Ethernet port: SN/HN/UN

XGK/XGI

* Programming language selection via CPU replacement

XGI: IEC standard programming

- CPU processing speed: 8.5ns/step
- I/O point: max. 6,144
- Various types of CPU S/H/U/UN (128K/512K/1MB/2MB)
- IEC 61131-3 Standard programming
  - LD (Ladder Diagram), SFC (Sequential Function Chart), ST (Structured Text)
  - User defined FB (Function Block)
- PID control
- Built-in Ethernet port: UN

XBC/XEC U

Block type (XGB Series)

- Supporting floating-point arithmetic
- Built-in Cnet, HSC, PID, Positioning, Pulse catch, Input filter, External interrupt
- Fieldbus Option: RS-232C, RS-422/485, Ethernet, Ethernet I/P, CANopen, Profibus-DP, DeviceNet
- Download port: Serial, USB

XBC/XEC H

Terminal block type

- XGB-U (XBC/XEC-U)
  - CPU processing speed: 60ns/step
  - Max. 352 I/O points
  - Program capacity: 32Ksteps/384KB (XBC/XEC)
  - Various line-up: standard, built-in analog, built-in positioning
  - Compatible with XGB expansion modules
- High performance (XBC/XEC-H)
  - CPU processing speed: 83ns/step
  - Max. 384 I/O points
  - Program capacity: 15Ksteps/200KB (XBC/XEC)
- Standard (XBC/XEC-SU)
  - CPU processing speed: 94ns/step
  - Max. 284 I/O points
  - Program capacity: 15Ksteps/200KB (XBC/XEC)
- Economic (XBC/XEC-E)
  - CPU processing speed: 240ns/step
  - Max 38 I/O points
  - Program capacity: 4Ksteps/50KB (XBC/XEC)
  - Option I/O only

XBC/XEC S

Standrd (XBM-S): Connector type

- Programming language: Ladder
- CPU processing speed: 160ns/step
- Max. 256-point I/O control
- Program capacity: 10Ksteps

XBC/XEC E

Option I/O

XBO-RTCA	RTC (Real Time Clock), Battery	XBO-AD02A	Voltage/Current, Input 2ch
XBO-DC04A	DC 24V Input 4 points	XBO-DA02A	Voltage/Current, Output 2ch
XBO-TN04A	Transistor (Sink) Output 4 points	XBO-AH02A	Voltage/Current, Input 1ch Voltage/Current, Output 1ch
XBO-RD02A	RTD (Resistance Temperature Detect), Input 2ch	XBO-TC02A	TC (Thermocouple), Input 2ch

* High speed counter and positioning functions are available in XBO-DC04A and XBO-TN04A, respectively with XGB standard type.

XBM (XBC-S)

XGT Panel Human Machine Interface

iXP Series (iXP50/iXP70/iXP80/iXP90)

- 1GHz 32bit RISC Embedded CPU
- 16,777,216 TFT color LCD
- 128MB display data and 1MB back-up memory
- Ethernet 1ch, RS-232C 1ch, RS-422/485 1ch
- USB host 3ch and device 1ch
- SD memory card interface

iXP50/iXP70/iXP80/iXP90

eXP Series (eXP20/eXP40/eXP60)

- 4.3", 7" and 10.2" wide-screen sizes TFT color LCD
- Ethernet 1ch, RS-485 1ch, RS-232C 1ch, RS-422/RS-485 1ch
- Large memory for drawing (64MB)
- USB Host 1ch and device 1ch

eXP20/eXP40/eXP60

XP Series (XP90/XP80/XP70/XP50/XP40/XP30)

- High and vivid distinction with 65,536 colors
- 10/100BASE-T Ethernet interface
- USB host for peripheral devices: USB drive, mouse, keyboard, etc.
- Sufficient memory for screen data: 10MB

XP30/XP50/XP70/XP80/XP90

Text type (XP10)

- Screen: 192×64 Graphic STN LCD
- RS-232C/RS-485 2ch separate to use
- Various function key-ESC ALM SET ENT F1~F4 Arrow keys

XP10

XGT InfoU SCADA Software

- Integrated development environment from graphic technology
- Various graphic library and graphic script
- Active X control and VB script supported
- Industrial standard interface like OLE DB, OPC server/client
- XP, Vista, Window 7, Window 8, 32/64 bit compatible

Smart I/O Distributed system

Stand alone type

- Wiring reduction and real time control of distributed I/Os
- Supports Rnet, DeviceNet, Profibus-DP, MODBUS (RS-422/485), RAPIEnet
- Various I/O (DC/TR/Relay) modules with 16/32 points

Expandable type

- Easy configuration of remote system using XGB expansion I/Os
- Up to 8 modules expandable with Network adapter
- Max. 256 point digital I/O
- Max. 16 channel analog I/O
- Network adapter: Profibus-DP, DeviceNet, Rnet, Modbus TCP/IP, EtherNet/IP

Expandable type

Stand alone type

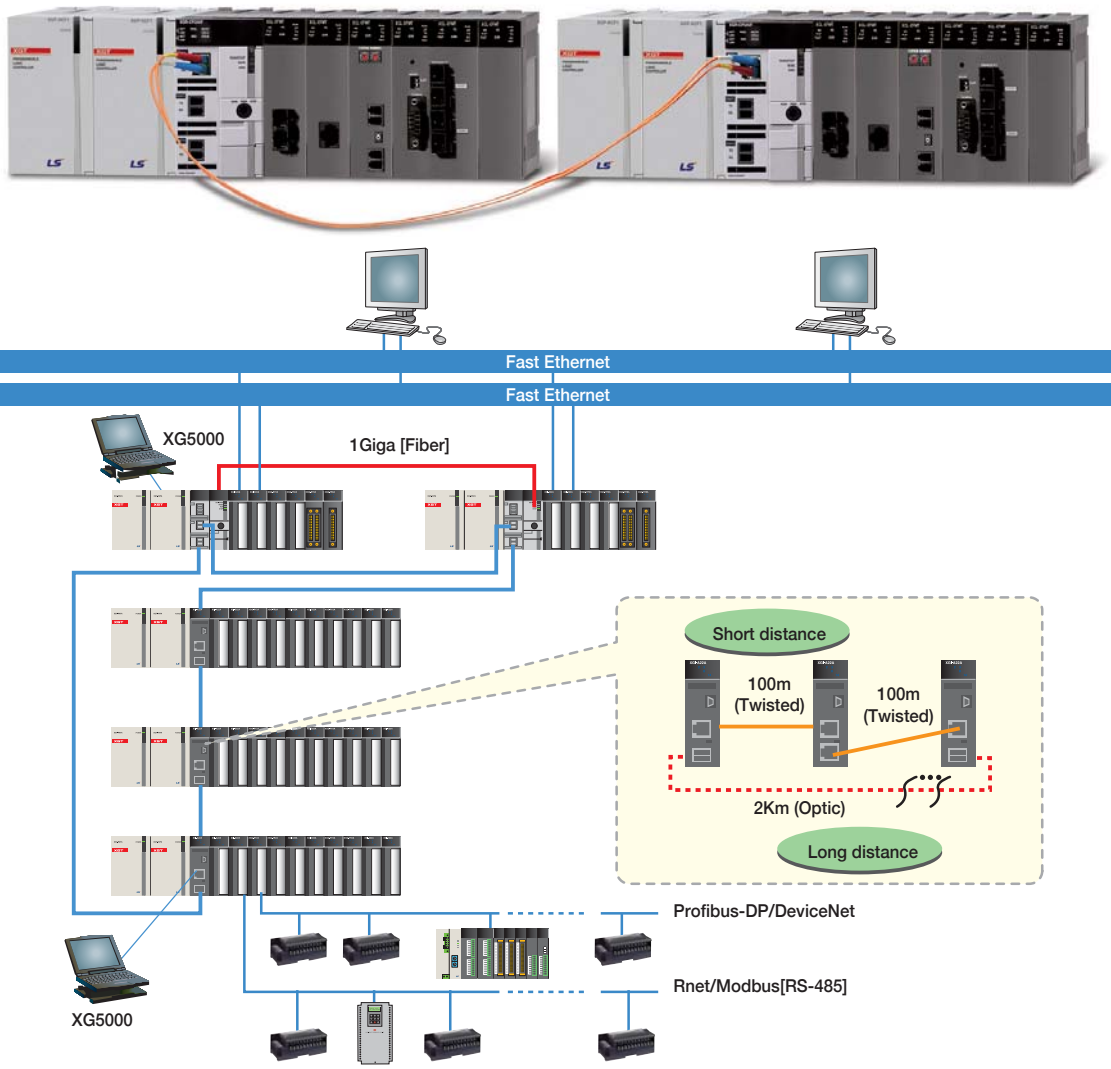
XGT Servo XDL/XML Series

- High resolution serial type encoder (~19bit)
  - Accurate position control and improved stability at low speed
- Motion network type (EtherCAT) XDL-N Series
- 100BASE-TX (100Mbps) Ethernet based real-time communication
- Supports full-closed control (Network type)
- Serial communication (RS-422/485, Modbus)
- Supports various operation modes (CSP, CSV, CST, PP, PV, PT, HM, IP, etc.)
- Safe torque off function
- Linked with LSIS's XGT PLC

LSIS Automation Products

XGR Series

Redundancy system for high-speed process control based on IEC



High performance

- Processing speed: 42ns/step
- CPU synchronization via fiber optic cable
- I/O points: max. 131,072
- Total memory: 25MB (Program 7MB, Data 2MB, Flash 16MB)
- Switching over time: min. 4.3ms/max. 22ms

Easy expansion installation using network

- Max. 31 expansion base
  Distance: Fiber 2km (Max. expansion 60km),
  Twisted pair 100m (Max. expansion 3km)
- Program upload and download via expansion base
- No limit to install the communication master on the expansion base

Enhanced maintenance via system history and network ring configuration

- Convenient system analysis using Operation history, Error history, System history
- Ring configuration to prevent a line disconnection error
- Network monitoring, protocol monitoring function
- Error channel monitoring via flag
- Graphic display for the system configuration
- Safe module exchange via Wizard

IEC 61131-3 Standard language

- LD, ST, SFC, IL (read only)
- Program configuration and data type based on IEC

Variety of communication function

- Easy interface using open network
  (Ethernet, Profibus-DP, DeviceNet, RS-232C, RS-422/485, etc.)
- Max. 24 communication module installation on the expansion base
  (High speed link 12, P2P 8)
- Network diagnosis via network and frame monitoring
- PLC link via dedicated communication based on Ethernet (RAPIEnet)

Variety of input and output modules

- 8/16/32/64 points (8 / 16 points relay output)
- Input/Output / Mixed module

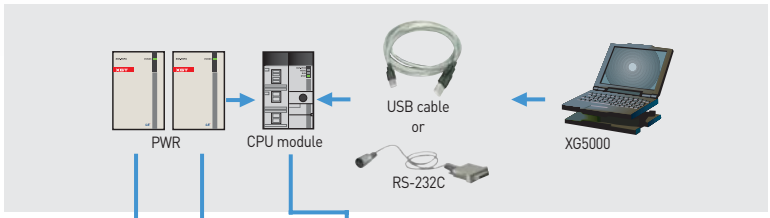
Enhanced analog function

- Enable to install the analog module on the expansion base
  (Max. 250, analog input 139)
- Insulated type and temperature module
- Easy to set the parameter via I/O parameter and flag
- Debugging function via special module monitoring

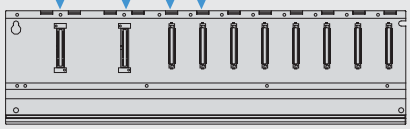
Integrated programming & engineering environment

- XG5000: Easy to program, various monitoring functions and enhanced editing function
- XG-PD: Convenient setup for communication and network parameter
- XG-P: Software package for positioning module
- XG-TCON: Temperature control and function of auto tuning

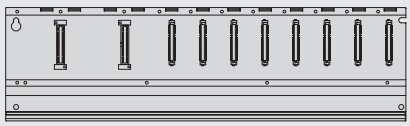
Product List



Main base



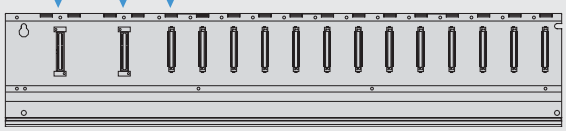
Main base [A Side] XGR-M06P / XGR-M02P



Main base [B Side] XGR-M06P / XGR-M02P

- 2 types of CPU (Fiber optic, Twisted fair)
- Power: AC110V, AC220V
- XGR-M06P: enable to install 6 communication modules

Expansion base



Expansion base XGR-E12P / XGR-E12H

- Power: 8.5A/AC110V, 8.5A/AC220V
- Expansion drive: Fiber optic, Twisted fair, Hybrid
- EFM* and EIM*: not available with 12slot base
- XGR-E12H: Dual expansion (XGR-DBDF/T/H)

CPU module	
Type	I/O point
XGR-CPUH/T [Twisted fair]	2port 23,808 Points
XGR-CPUH/F [Fiber optic]	

Type	I/O point
USB-301A	USB downloading cable
K1C-050A	RS232C downloading cable
XGC-F201	CPU synchronization cable: 2m
XGC-F501	CPU synchronization cable: 5m

Power	
XGR-AC12	AC110V 5.5A (Main / Expansion base)
XGR-AC13	AC110V 8.5A (Expansion base)
XGR-AC22	AC220V 5.5A (Main / Expansion base)
XGR-AC23	AC220V 8.5A (Expansion base)
XGR-DC42	DC24V / 5V 7A (Main / Expansion base)

CPU module		I/O point
XGK	XGK-CPUH,CPUU, CPUHN, CPUUN	6,144
	XGK-CPUS,CPUA, CPUSN	3,072
	XGK-CPUE	1,536
XGI	XGI-CPUUN, CPUU/D, CPUU, CPUH	6,144
	XGI-CPUS	3,072
	XGI-CPUE	1,536

Item	Type	Description
USB cable	USB-301A	USB downloading cable
RS-232C cable	KIC-050A	RS-232C downloading cable

Power module			
AC	Free Voltage	XGP-ACF1	DC5V 3A
			DC24V 0.6A
		XGP-ACF2	DC5V 6A
	220V	XGP-AC23	DC5V 8.5A
DC		XGP-DC42	DC5V 6A

Item	Input module		
	AC110V	AC220V	DC24V
8 points	-	XGI-A21A, XGI-A21C	XGI-D21A
16 points	XGI-A12A	-	XGI-D22A
	-	-	XGI-D22B
32 points	-	-	XGI-D24A
	-	-	XGI-D24B
64 points	-	-	XGI-D28A
	-	-	XGI-D28B

Item	Output module		
	Relay	Triac	Transistor
8 points	XGQ-RY1A	-	-
16 points	XGQ-RY2A	XGQ-SS2A	XGQ-TR2A
	XGQ-RY2B	-	XGQ-TR2B
32 points	-	-	XGQ-TR4A
	-	-	XGQ-TR4B
64 points	-	-	XGQ-TR8A
	-	-	XGQ-TR8B

Item	Input/Output mixed module	
	16-point DC input	16-point TR output

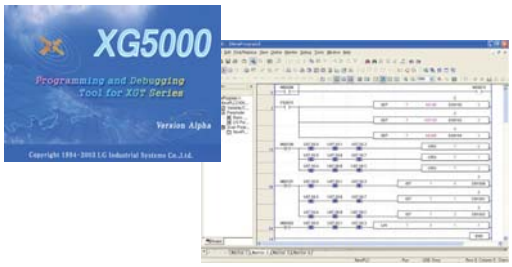
Special module		
Analog input	XGF-AV8A	Voltage input type, 8Ch
	XGF-AC8A	Current input type, 8Ch
	XGF-AD8A	Voltage/ Current input, 8Ch
	XGF-AD4S	Voltage/ Current input, 4Ch (Isolated)
	XGF-AD16A	Voltage/ Current input, 16Ch
	XGF-AW4S	2-wire, Voltage/ Current input, 4Ch (Isolated)
Analog output	XGF-DV4A	Voltage output type, 4Ch
	XGF-DC4A	Current output type, 4Ch
	XGF-DV8A	Voltage output type, 8Ch
	XGF-DC8A	Current output type, 8Ch
	XGF-DV4S	Voltage output, 4Ch (Isolated)
	XGF-DC4S	Current output, 4Ch (Isolated)
Analog Input/Output	XGF-AH6A	Input: 4ch, Voltage/ Current
		Output: 2Ch Voltage/ Current
High-speed counter	XGF-HO2A	Pulse (OC) input type, 2Ch
	XGF-HD2A	Pulse (LD) input type, 2Ch
Positioning	XGF-P01A-P03A	Open collector, 1~3axes
	XGF-PD1A-PD3A	Line drive, 1~3axes
	XGF-P01H-P04H	Open collector, 1~4axes
	XGF-PD1H-PD4H	Line drive, 1~4axes
Positioning (Network Type)	XGF-PN8A	LS Standard EtherCAT Net. 8axes
	XGF-PN8B	Standard EtherCAT Net. 8axes
	XGF-PN4B	Standard EtherCAT Network, 4axis
Motion modnle	XGF-M32E	Standard EtherCAT Nee. 32axes
Temperature control	XGF-TC4S	Thermocouple input, 4Ch
	XGF-RD4A	RTD input, 4Ch
	XGF-RD4S	RTD input, 4Ch (Insulated)
Temperature controller	XGF-TC4UD	Input: 4ch.(Voltage/Current, RTD/TC)
		Output: 8ch.(TR/Current)
		Controller: 4 loops
	XGF-TC4RT	Input: 4ch.(RTD)
		Output: 4ch.(TR)
		Controller: 4 loops
Event input	XGF-SOEA	DC24V, 32points

Communication module		
RAPIEnet	XGL-EIMT	RAPIEnet Twisted fair 2Ch
	XGL-EIMH	RAPIEnet Fiber optic/Twisted fair 1Ch
	XGL-EIMF	RAPIEnet Fiber optic 2Ch
	XGL-ES4T	RAPIEnet Switch. 4Ports
	XOL-EIMT	RAPIEnet Twisted fair 2Ch For PC
	XOL-EIMF	RAPIEnet Fiber optic 2Ch For PC
Cnet	XGL-CH2B	RS-232C/RS-422
	XGL-C22B	RS-232C, 2Ch
	XGL-C42B	RS-422, 2Ch
Ethernet (Open)	XGL-EFMF	Fiber optic, Master, SC type
	XGL-EFMT	Twisted pair, Master, RJ-45
	XGL-EH5T	Fast Ethernet, Switching hub
Ethernet (Dedicated)	XGL-EDMF	Fiber optic, Master, SC type
	XGL-EDMT	Twisted pair, Master, RJ-45
EtherNet/IP	XGL-EIPT	Industrial Ethernet, 2ports
Rnet	XGL-RMEA	Rnet, Master, TP
DeviceNet	XGL-DMEA	DeviceNet, Master
Profibus-DP	XGL-PMEA	Profibus-DP, Master SyCon
	XGL-PMEC	Profibus-DP, Master ProfiCon
	XGL-PSRA	Profibus-DP Slave, Remote interface
	XGL-PSEA	Profibus-DP Slave
Fnet	XGL-FMEA	Dedicated network

LSIS Automation Products

XGK/XGI Series

High performance PLC



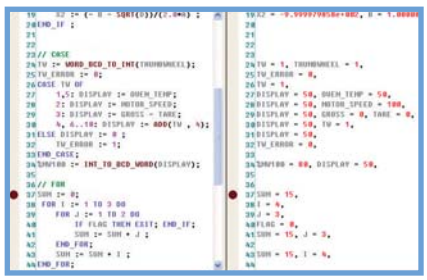
XGK series

- Fastest CPU processing of 8.5ns/step
- Up to 6,144 I/O points configurable (32,768 points controllable with remote I/O)
- Integrated intelligent software package: XG5000, XG-PD, XG-PM
- System solution based on open network: Ethernet, Profibus-DP, DeviceNet
- Special devices for easy programming
- Massive device memory
- USB I/F for programming up/download & monitoring

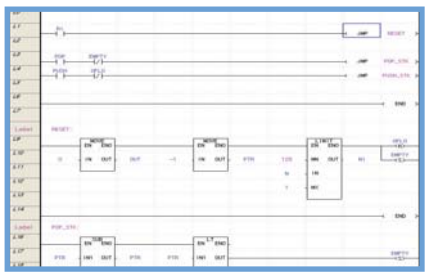
XGI series

- Fastest CPU processing.of 8.5ns/step
- Up to 6,144 I/O points configurable (131,072 points controllable with remote I/O)
- IEC 61131-3 Standard programming
  - LD (Ladder Diagram), SFC (Sequential Function Chart), ST (Structured Text)
  - User defined FB (Function Block)
- Built-in PID function (Max. 256 loop)
- USB I/F for programming up/download & monitoring

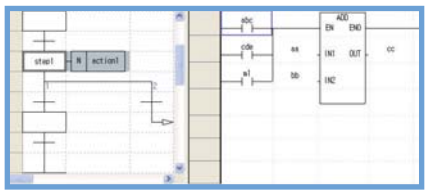
ST



LD



SFC



XGK/XGI-CPUUN, XGK-CPUHN, CPUSN

XGK-CPUUN (XGI-CPUUN)

- Built-in Ethernet port
- 256K (2MB) program memory
- 8.5ns processing speed
- 6,144 I/O points control

XGK-CPUHN

- Built-in Ethernet port
- 128K (1MB) program memory
- 8.5ns processing speed
- 6,144 I/O points control

XGK-CPUSN

- Built-in Ethernet port
- 64K (512KB) program memory
- 8.5ns processing speed
- 3,072 I/O points control

XGI:CPUU/D, CPUU, CPUH, CPUS, CPUS/P, CPUE

XGK-CPUU (XGI-CPUU)

- 128K (1MB) program memory
- 28ns processing speed
- 6,144 I/O points control

XGK-CPUH (XGI-CPUH)

- 64K (512KB) program memory
- 28ns processing speed
- 6,144 I/O points control

XGK-CPUA

- 32K program memory
- 28ns processing speed
- 3,072 I/O points control

XGK-CPUS (XGI-CPUS)

- 32K (128KB) program memory
- 84ns processing speed
- 3,072 I/O points control

XGK-CPUE (XGI-CPUE)

- 16K (64KB) program memory
- 84ns processing speed
- 1,536 I/O points control

Expansion modules

Power modules

With AC Free voltage, 220V and DC 24 V power supply

Base modules

With 4/6/8/12 main and expansion base

Digital input/output modules

From 8 to 64 of transistor, relay and triac switches

Analog input/output modules

With 4 or 8 ch current/voltage signals

Temperature input modules

With 4 ch Pt100/JPt100 resistance thermometer and thermocouple

High speed counter module

For connection with incremental encoder (2 channels of Open collector or Line driver type)

Positioning module

1~4 axes positioning for servo, step drive and motor

Network modules

Fast Ethernet modules

Ethernet network with TCP/IP protocol

Profibus-DP modules

Profibus-DP fieldbus protocol for connection between LS PLC and different manufacturers

DeviceNet modules

DeviceNet fieldbus protocol for connection between LS PLC and different manufacturers

Rnet modules

Dedicated network for remote I/O control (LS Smart I/O)

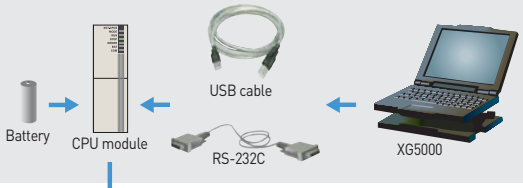
Cnet modules

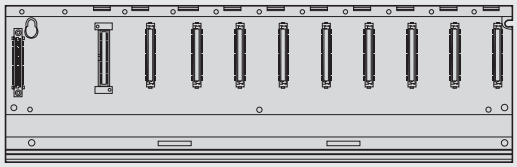
Serial communication module with RS-232C/422/485

RAPIEnet module

Dedicated network based on Ethernet

Product List

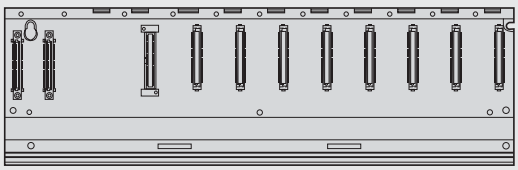




Main Base (XGB-M□□ A)

Expansion cable (XGC-E□□□)

Item	Type	Description
Expansion cable	XGC-E041	Expansion cable 0.4m
	XGC-E061	Expansion cable 0.6m
	XGC-E121	Expansion cable 1.2m
	XGC-E301	Expansion cable 3.0m
	XGC-E501	Expansion cable 5.0m
	XGC-E102	Expansion cable 10m
	XGC-E152	Expansion cable 15m
Expansion terminator	XGT-TERA	Expansion terminator



Expansion base (XGB-E□□ A)

Item	Main base	Expansion base
4 slot	XGB-M04A	XGB-E04A
6 slot	XGB-M06A	XGB-E06A
8 slot	XGB-M08A	XGB-E08A
12 slot	XGB-M12A	XGB-E12A

Power module (XGP-□□□□)

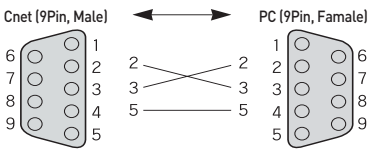
Input module (XGI-□□□□)

Output module (XGQ-□□□□)

Special module (XGF-□□□□)

Communication module (XGL-□□□□)

XG5000 Cable (RS-232C)



CPU module		I/O point
XGK	XGK-CPUH,CPUU, CPUHN, CPUUN	6,144
	XGK-CPUS,CPUA, CPUSN	3,072
	XGK-CPUE	1,536
XGI	XGI-CPUUN, CPUU/D, CPUU, CPUH	6,144
	XGI-CPUS	3,072
	XGI-CPUE	1,536

CPU Connecting Cable	
USB 301A	USB downloading cable
K1C-050A	RS-232C downloading cable

Item	Type	Description
USB cable	USB-301A	USB downloading cable
RS-232C cable	KIC-050A	RS-232C downloading cable

Item	Input module		
	AC110V	AC220V	DC24V
8 points	-	XGI-A21A, XGI-A21C	XGI-D21A
16 points	XGI-A12A	-	XGI-D22A
	-	-	XGI-D22B
32 points	-	-	XGI-D24A
	-	-	XGI-D24B
64 points	-	-	XGI-D28A
	-	-	XGI-D28B

Power module			
AC	Free Voltage	XGP-ACF1	DC5V 3A DC24V 0.6A
		XGP-ACF2	DC5V 6A
	220V	XGP-AC23	DC5V 8.5A
DC		XGP-DC42	DC5V 6A

Item	Output module		
	Relay	Triac	Transistor
8 points	XGQ-RY1A	-	-
16 points	XGQ-RY2A	XGQ-SS2A	XGQ-TR2A
	XGQ-RY2B	-	XGQ-TR2B
32 points	-	-	XGQ-TR4A
	-	-	XGQ-TR4B
64 points	-	-	XGQ-TR8A
	-	-	XGQ-TR8B

Item	Input/Output mixed module	
	16-point DC input	16-point TR output

Special module		
Analog input	XGF-AV8A	Voltage input type, 8Ch
	XGF-AC8A	Current input type, 8Ch
	XGF-AD8A	Voltage/ Current input, 8Ch
	XGF-AD4S	Voltage/ Current input, 4Ch (Isolated)
	XGF-AD16A	Voltage/ Current input, 16Ch
	XGF-AW4S	2-wire, Voltage/ Current input, 4Ch (Isolated)
Analog output	XGF-DV4A	Voltage output type, 4Ch
	XGF-DC4A	Current output type, 4Ch
	XGF-DV8A	Voltage output type, 8Ch
	XGF-DC8A	Current output type, 8Ch
	XGF-DV4S	Voltage output, 4Ch (Isolated)
	XGF-DC4S	Current output, 4Ch (Isolated)
Analog Input/Output	XGF-AH6A	Input: 4ch, Voltage/ Current
		Output: 2Ch Voltage/ Current
High-speed counter	XGF-HO2A	Pulse (OC) input type, 2Ch
	XGF-HD2A	Pulse (LD) input type, 2Ch
Positioning	XGF-P01A~P03A	Open collector, 1~3axes
	XGF-PD1A~PD3A	Line drive, 1~3axes
	XGF-P01H~P04H	Open collector, 1~4axes
	XGF-PD1H~PD4H	Line drive, 1~4axes
Positioning (Network Type)	XGF-PN8A	LS Standard EtherCAT Net. 8axes
	XGF-PN8B	Standard EtherCAT Net. 8axes
	XGF-PN4B	Standard EtherCAT Network, 4axis
Motion modnle	XGF-M32E	Standard EtherCAT Nee,32axes
Temperature control	XGF-TC4S	Thermocouple input, 4Ch
	XGF-RD4A	RTD input, 4Ch
	XGF-RD4S	RTD input, 4Ch (Insulated)
Temperature controller	XGF-TC4UD	Input: 4ch.(Voltage/Current, RTD/TC)
		Output: 8ch.(TR/Current)
	XGF-TC4RT	Controller: 4 loops
		Input: 4ch.(RTD)
		Output: 4ch.(TR)
		Controller: 4 loops
Event input	XGF-SOEA	DC24V, 32points

Communication module		
RAPIEnet	XGL-EIMT	RAPIEnet Twisted fair 2Ch
	XGL-EIMH	RAPIEnet Fiber optic/Twisted fair 1Ch
	XGL-EIMF	RAPIEnet Fiber optic 2Ch
	XGL-ES4T	RAPIEnet Switch, 4Ports
	XOL-EIMT	RAPIEnet Twisted fair 2Ch For PC
	XOL-EIMF	RAPIEnet Fiber optic 2Ch For PC
Cnet	XGL-CH2B	RS-232C/RS-422
	XGL-C22B	RS-232C, 2Ch
	XGL-C42B	RS-422, 2Ch
Ethernet (Open)	XGL-EFMF	Fiber optic, Master, SC type
	XGL-EFMT	Twisted pair, Master, RJ-45
	XGL-EH5T	Fast Ethernet, Switching hub
Ethernet (Dedicated)	XGL-EDMF	Fiber optic, Master, SC type
	XGL-EDMT	Twisted pair, Master, RJ-45
Rnet	XGL-EIPT	Industrial Ethernet, 2ports
EtherNet/IP	XGL-RMEA	Rnet, Master, TP
DeviceNet	XGL-DMEA	DeviceNet, Master
Profibus-DP	XGL-PMEA	Profibus-DP, Master SyCon
	XGL-PMEC	Profibus-DP, Master ProfiCon
	XGL-PSRA	Profibus-DP, Slave, Remote Inter face
	XGL-PSEA	Profibus-DP, Slave
Fnet	XGL-FMEA	Dedicated network

LSIS Automation Products

XGB Series

Micro PLC

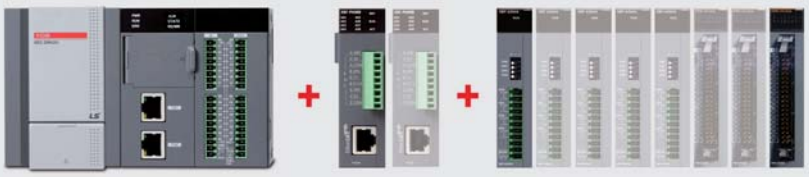
LSIS introduces its most compact and high performance PLC, XGB series. The compactness, high performance, easiness, convenience and functionality are five important characteristics of the XGB PLC.

Its compactness ensures that it occupies less space in the equipment and its diverse expendability guarantees flexibility for needs. And its various built-in functions enable the cost-effective PLC system. This controller is particularly suitable for performing small-to-medium performance automation tasks.

Features

XBC/XEC-U

- Max. 69ns/step processing speed
- Max. 2 High speed backplane expansion modules
- Max. 10 expansion modules
- Max. 352 I/O points
- Compatible with XGB expansion modules



XBC/XEC-H/SU/E

Max. 83ns/step processing speed and floating-point arithmetic with on-board CPU

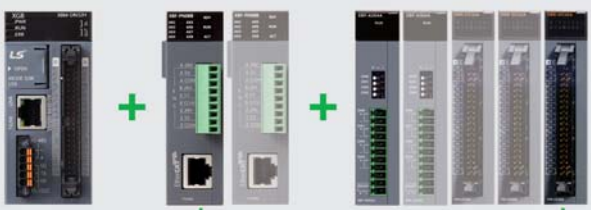
- High Performance (H type): Max. 10 expansion modules and max. 384 I/O point control
- Standard (SU type): Max. 7 expansion modules including option modules and max. 284 I/O point control
- Economic (E type): Max. 2 option modules and max. 38 I/O point control

XBM (H, S-type)

- Faster Instruction Times: 83ns / step
- Larger Memory: 20Ksteps of built-in program memory
- Controllable I/O: 256 points
- Expandability: 7 cards (compatible with all XGB cards)
- 160ns/step processing speed and floating-point arithmetic with on-board CPU
- Max. 7 expansion modules, max. 256 I/O point control: PLC systems for small and medium scale applications
- Max. 5 channel communication with built-in functions and expansion modules

XBM S

XBM H



Product List

Main / Expansion modules

Block type unit (U)	
Model	**Specification**
XBC/XEC-DN(P)32U	AC 110-220V, 16points DC24V input, 16points transistor sink(source) type output
XBC/XEC-DR28U	AC 110-220V, 16points DC24V input, 12points relay output
XBC/XEC-DN(P)32UP	AC 110-220V, 16points DC24V input, 16points transistor sink(source) type output, 4 axes built-in positioning
XBC/XEC-DR28UP	AC 110-220V, 16points DC24V input, 12points relay output, 4 axes built-in positioning
XBC/XEC-DN(P)32UA	AC 110-220V, DC24V input, 16points transistor sink(source) type output, 8 channel built-in analog
XBC/XEC-DR28UA	AC 110-220V, DC24V input, 12points relay output, 8 channel built-in analog
XBC/XEC-DN(P)32U/DC	DC 24V, 16points DC24V input, 16points transistor sink(source) type output
XBC/XEC-DR28U/DC	DC 24V, 16points DC24V input, 12points relay output
XBC/XEC-DN(P)32UP/DC	DC 24V, 16points DC24V input, 16points transistor sink(source) type output, 4 axes built-in positioning
XBC/XEC-DR28UP/DC	DC 24V, 16points DC24V input, 12points relay output, 4 axes built-in positioning
XBC/XEC-DN(P)32UA/DC	DC 24V, DC24V input, 16points transistor sink(source) type output, 8 channel built-in analog
XBC/XEC-DR28UA/DC	DC 24V, DC24V input, 12points relay output, 8 channel built-in analog
Block type unit (High performance)	
XBC/XEC-DR32H	AC 100-240V, DC24 input 16 pts, relay output 16 pts
XBC/XEC-DR64H	AC 100-240V, DC24 input 32 pts, relay output 32 pts
XBC/XEC-DN32H	AC 100-240V, DC24 input 16 pts, Tr. output 16 pts (Sink)
XBC/XEC-DN64H	AC 100-240V, DC24 input 32 pts, Tr. output 32 pts (Sink)
XEC-DP32H	AC 100-240V, DC24 input 16 pts, Tr. output 16 pts (Source)
XEC-DP64H	AC 100-240V, DC24 input 32 pts, Tr. output 32 pts (Source)
XBC-DR32H/DC	DC 24V, DC24 input 16 pts, relay output 16 pts
XBC-DR64H/DC	DC 24V, DC24 input 32 pts, relay output 32 pts
XBC-DN32H/DC	DC 24V, DC24 input 16 pts, Tr. output 16 pts (Sink)
XBC-DN64H/DC	DC 24V, DC24 input 32 pts, Tr. output 32 pts (Sink)
XEC-DR32H/D1	DC 12/24V, DC12/24 input 16 pts, relay output 16 pts
XEC-DR64H/D1	DC 12/24V, DC12/24 input 32 pts, relay output 32 pts
Block type unit (Standard)	
XBC/XEC-DR20SU	AC 100-240, DC24V input 12 pts, relay output 8 pts
XBC/XEC-DR30SU	AC 100-240, DC24V input 18 pts, relay output 12 pts
XBC/XEC-DR40SU	AC 100-240, DC24V input 24 pts, relay output 16 pts
XBC/XEC-DR60SU	AC 100-240, DC24V input 36 pts, relay output 24 pts
XBC/XEC-DN20SU	AC 100-240, DC24V input 12 pts, Tr. output 8 pts (Sink)
XBC/XEC-DN30SU	AC 100-240, DC24V input 18 pts, Tr. output 12 pts (Sink)
XBC/XEC-DN40SU	AC 100-240, DC24V input 24 pts, Tr. output 16 pts (Sink)
XBC/XEC-DN60SU	AC 100-240, DC24V input 36 pts, Tr. output 24 pts (Sink)
XBC/XEC-DP20SU	AC 100-240, DC24V input 12 pts, Tr. output 8 pts (Source)
XBC/XEC-DP30SU	AC 100-240, DC24V input 18 pts, Tr. output 12 pts (Source)
XBC/XEC-DP40SU	AC 100-240, DC24V input 24 pts, Tr. output 16 pts (Source)
XBC/XEC-DP60SU	AC 100-240, DC24V input 36 pts, Tr. output 24 pts (Source)
Block type unit (Economic)	
XBC/XEC-DR10E	AC 100-240V, 6 pts DC input, 4 pts Relay ouput
XBC/XEC-DR14E	AC 100-240V, 8 pts DC input, 6 pts Relay ouput
XBC/XEC-DR20E	AC 100-240V, 12 pts DC input, 8 pts Relay ouput
XBC/XEC-DR30E	AC 100-240V, 18 pts DC input, 12 pts Relay ouput
XBC/XEC-DN10E	AC 100-240V, 6 pts DC input, 4 pts Tr. output(Sink)
XBC/XEC-DN14E	AC 100-240V, 8 pts DC input, 6 pts Tr. output(Sink)
XBC/XEC-DN20E	AC 100-240V, 12 pts DC input, 8 pts Tr. output(Sink)
XBC/XEC-DN30E	AC 100-240V, 18 pts DC input, 12 pts Tr. output(Sink)
XBC/XEC-DP10E	AC 100-240V, 6 pts DC input, 4 pts Tr. output(Source)
XBC/XEC-DP14E	AC 100-240V, 8 pts DC input, 6 pts Tr. output(Source)
XBC/XEC-DP20E	AC 100-240V, 12 pts DC input, 8 pts Tr. output(Source)
XBC/XEC-DP30E	AC 100-240V, 18 pts DC input, 12 pts Tr. output(Source)
Modular type unit	
XBM-DN32H	DC24V, 16 pts DC 24V input, 16 pts TR output
XBM-DR16S	DC 24V, 8 pts DC 24V input, 8 pts relay output
XBM-DN16S	DC 24V, 8 pts DC 24V input, 8 pts TR output
XBM-DN32S	DC 24V, 16 pts DC 24V input, 16 pts TR output
Loader cable	
PMC-310S	Connection cable (PC to PLC), 9pin (PC)-6pin (PLC)
USB-301A	Connection cable (PC to PLC), USB
Memory module	
XBO-M2MB	Memory

Expansion I/O module	
Model	**Specification**
XBE-DC08A	8 pts DC 24V input
XBE-DC16A	16 pts DC 12/24V input
XBE-DC16B	16 pts DC 24V input
XBE-DC32A	32 pts DC 24V input
XBE-RY08A	8 pts relay output
XBE-RY08B	8 pts relay output
XBE-RY16A	16 pts relay output
XBE-TN08A	8 pts Tr. (sink) output
XBE-TN16A	16 pts Tr. (sink) output
XBE-TN32A	32 pts Tr. (sink) output
XBE-TP08A	8 pts Tr. (source) output
XBE-TP16A	16 pts Tr. (source) output
XBE-TP32A	32 pts Tr. (source) output
XBE-DR16A	8 pts DC 24V input, 8pt relay output
XBE-DN32A	16 pts DC24V input, 16 pts TR output
Special module	
XBF-AD04A	4ch analog input (current/voltage)
XBF-AD04C	4ch analog input (current/voltage, resolution : 1/16000)
XBF-AH04A	2ch analog input (current/voltage)/ 2ch analog output (current/voltage)
XBF-DV04A	4ch analog output (voltage)
XBF-DV04C	4ch analog input (voltage, resolution : 1/16000)
XBF-DC04A	4ch analog output (current)
XBF-DC04C	4ch analog input (current, resolution : 1/16000)
XBF-RD04A	4ch RTD input
XBF-TC04S	4ch Thermocouple input
XBF-TC04TT	Temperature controller, Thermocouple
XBF-TC04RT	Temperature controller, RTD
XBF-PD02A	Line drive 2axes
XBF-PN08B	EtherCAT Positioning module, 8axes
XBF-PN04B	Standard EtherCAT Network, 4axis
XBF-AD08A	8ch analog input (Current/voltage)
XBF-HO02A	2ch High-speed counter input (Open collector)
XBF-HD02A	2ch High-speed counter input (Line drive)
Communication module	
XBL-C41A	Cnet (RS-422/485), 1ch
XBL-C21A	Cnet (RS-232C), 1ch
XBL-EMTA	Fast Ethernet (100Mbps), 1ch
XBL-EIPT	Ethernet/IP, 2ch
XBL-EIMT	RAPIEnet, Twisted pair 2ch, 100Mbps
XBL-EIMF	RAPIEnet I/F, Max. 2km (Fiber 2ch.), 100Mbps
XBL-EIMH	RAPIEnet I/F (Twisted pair 1ch, Fiber 1ch.), 100Mbps
XBL-PMEC	Profibus-DP, Master, RS-485
XBL-PSEA	Profibus-DP, Slave, RS-485
XBL-DSEA	DeviceNet, Slave
XBL-RMEA	Rnet, Master
XBL-CMEA	CANopen (10, 20, 50, 100, 125, 250, 500, 800, 1000Kbps, Num of PDO : 32)
XBL-CSEA	CANopen (10, 20, 50, 100, 125, 250, 500, 800, 1000Kbps, Num of PDO : 64)
Option module	
XBO-AD02A	Voltage/Current, Input 2ch
XBO-DA02A	Voltage/Current, Output 2ch
XBO-AH02A	Voltage/Current, Input 1ch, Voltage/Current, Output 1ch
XBO-TC02A	TC (Thermo couple), Input 2ch
XBO-RTCA	RTC (Real time clock), Battery
XBO-DC04A	DC 24V, Input 4 pts
XBO-TN04A	TR (Sink), Output 4 pts
XBO-RD01A	RTD (Resistance temperature detector), Input 1ch

Terminal board	Connection cable	XBM-DN16S / XBM-DN32S	XBE-DC32A	XBE-TN32A	XBE-TP32A	Cable length
XTB-40H (TG7-1H40S) (Terminal board)	R40H/20HH-05S-XBM3	●	-	-	-	0.5m
	R40H/20HH-10S-XBM3	●	-	-	-	1.0m
TG7-1H40CA (Terminal board, common)	C40HH-05SB-XBI	-	●	●	●	0.5m
	C40HH-10SB-XBI	-	●	●	●	1.0m
	C40HH-15SB-XBI	-	●	●	●	1.5m
	C40HH-20SB-XBI	-	●	●	●	2.0m
	C40HH-30SB-XBI	-	●	●	●	3.0m
R32C-NS5A-40P (Relay board: sink)	C40HH-05SB-XBI	-	-	●	-	0.5m
	C40HH-10SB-XBI	-	-	●	-	1.0m
	C40HH-15SB-XBI	-	-	●	-	1.5m
	C40HH-20SB-XBI	-	-	●	-	2.0m
	C40HH-30SB-XBI	-	-	●	-	3.0m
R32C-PS5A-40P (Relay board: source)	C40HH-05PH-XBP	-	-	-	●	0.5m
	C40HH-15PH-XBP	-	-	-	●	1.5m
	C40HH-20PH-XBP	-	-	-	●	2.0m

LSIS Automation Products

SMART I/O

Stand alone type

Features

- Wiring reduction and real time control of distributed I/O
- Supporting Rnet, DeviceNet, Profibus-DP, MODBUS(RS-422/485), RAPIEnet(RJ-45)
- Various I/O (DC/TR/Relay) modules with the unit of 16/32 points

Digital I/O specifications

Item		Input		Output			Mixed module	
		DC (Sink/Source)		Transistor (Sink)			RelayDC (Sink/Source)	
Transistor (Sink)								
No. of point		16	32	16	32	16	16	16
Rated input (Load voltage)		DC 24 V		DC 24 V		DC 24 V/AC 110 V/220 V	DC 24 V	DC 24 V
Input current (Load current)		7 mA		0.1 A/2 A, 0.5 A/3 A		2 A/5 A	7 mA 0.1 A/2 A, 0.5 A/3 A	
Response time	Off → On	3 ms or less		3 ms or less		3 ms or less	3 ms or less	3 ms or less
	On → Off	3 ms or less		3 ms or less		3 ms or less	3 ms or less	3 ms or less
Common		16 points/COM		16 points/COM		16 points/COM	16 points/COM	16 points/COM
Current consumption		200 mA	300 mA	280 mA	380 mA	550 mA	350 mA	
Network	Rnet	GRL-D22C	GRL-D24C	GRL-TR2C1	GRL-TR4C1	GRL-RY2C	GRL-DT4C1	
	Profibus-DP	GPL-D22C	GPL-D24C	GPL-TR2C/TR2C1	GPL-TR4C/TR4C1	GPL-RY2C	GPL-DT4C/DT4C1	
	DeviceNet	GDL-D22C	GDL-D24C	GDL-TR2C/TR2C1	GDL-TR4C/TR4C1	GDL-RY2C	GDL-DT4C/DT4C1	
	Modbus	GSL-D22C	GSL-D24C	GSL-TR2C1	GSL-TR4C1	GSL-RY2C	GSL-DT4C1	

Note1) C Source, Rated current: 0.5A, terminal separated type
C1 Sink, Rated current: 0.5A terminal separated type

Analog I/O specifications

Item	GPL-AV8C / GEL-AV8C	GPL-AC8C / GEL-AC8C	Item	GPL-DV4C / GEL-DV4C	GPL-DC4C / GEL-DC4C
Input channels	8 channels		Output channels	4 channels	
Analog input	DC 1~5 V, 0~5 V, 0~10 V, -10~+10 V	0~20 mA, 4~20 mA, - 20~20 mA	Digital input	0~4000, 0~8000, -8000~8000	0~8000
			Analog output	DC 1~5 V, 0~5 V, 0~10 V, -10~+10 V	0~20 mA, 4~20 mA
Digital output	0~4000, 0~8000, -8000~8000	0~4000, -8000~8000			
Input impedance	1 MΩ	250 Ω	Load impedance	1 KΩ or more (0~5 V or 1~5 V)	
Max. resolution	±15 V	±30 mA		2 KΩ or more (0~10 V or -10~10 V)	500 Ω or less
	1.25 mV	2.5 μA	Resolution	1.25 mV	2.5 μA
Accuracy	±0.3% (full scale, Ta=0~55 °C)	±0.3% (full scale, Ta=23 °C±5 °C)	Accuracy	±0.3% (full scale, Ta=0~55 °C)	±0.3% (full scale, Ta=23 °C±5 °C)
		±0.4% (full scale, Ta=0~55 °C)			±0.4% (full scale, Ta=0~55 °C)
Conversion speed	10 ms or less/8 channel		Conversion speed	10 ms or less/4 channel	
Response period	10 ms or less/8 channels + Transmission period (ms)		Response period	10 ms or less/8 channels + Transmission period (ms)	
	Analog input/output terminal with FG→Insulation			Analog input/output terminal with FG→Insulation	
Insulation method	Analog input/output terminal with Communication terminal→Insulation		Insulation method	Analog input/output terminal with Communication terminal→Insulation	
	Analog input/output terminal with each channel→No insulation			Analog input/output terminal with each channel→No insulation	
External power supply	DC 24 V (21.6 ~ 26.4)		External power supply	DC 24 V (20.4 ~ 28.8)	
External current consumption	DC 24 V : 220 mA		External current consumption	210 mA	240 mA
	0.313	0.313			

Communication specifications

Item	Rnet (LS dedicated network)	Profibus-DP	DeviceNet	MODBUS	RAPIEnet(RJ-45)
Protocol	LSIS dedicated protocol (Fnet for Remote)	Profibus-DP (RS-485/EN50170)	DeviceNet (CAN)	MODBUS (RS-422/485)	Fast Ethernet
Transmission speed	1 Mbps	9.6 Kbps ~ 12 Mbps	125/250/500 Kbps	2.4 Kbps ~ 38.4 Kbps	100Mbps
Transmission distance	750 m/segment	100 m ~ 1.2 km	500/250/125 m (Thin cable: 100 m)	500 m	100M
Topology	Bus Token	Bus	Trunk & Drop	Bus	CRC32
Transmission	Pass & Broadcast	Token Pass & Master/Slave (Poll)	CSMA/NBA (Poll, Cyclic, COS, Bit Strobe)	Master/Slave (Poll)	CSMA/CD
	32/segment (Input: 32, Output: 32)	32/segment, 99/network	64	32	64

SMART I/O

Expandable type

Features

- Easy configuration of remote system using XGB expansion I/O
- Up to 8 modules expandable with Network adapter
- Max. 256 point digital I/O
- Max. 16 channel analog I/O
- Network adapter: Profibus-DP, DeviceNet, Rnet, Modbus TCP, EtherNet/IP

Modbus TCP, EtherNet/IP

DeviceNet

Profibus-DP

Available module

In/Out	Part Number	XDL-BSSA	XPL-BSSA	XEL-BSSA	XEL-BSSB	XRL-BSSA
DC Input	XBE-DC08A	○	○	○	○	○
	XBE-DC16A(B)	○	○	○	○	○
	XBE-DC32A	○	○	○	○	○
Relay Output	XBE-RY08A(B)	○	○	○	○	○
	XBE-RY16A	○	○	○	○	○
TR Output	XBE-	○	○	○	○	○
	TN(TP)08A	○	○	○	○	○
	XBE-	○	○	○	○	○
Mixed	TN(TP)16A	○	○	○	○	○
A/D (V/I)	XBE-	○	○	○	○	○
	TN(TP)32A	×	○	○	○	○
	XBE-DR16A	×	○	○	○	○
D/A (I)	XBF-AD04A	○	○	○	○	○
	XBF-AD08A	×	○	○	○	○
D/A (V)	XBF-AD04C	○	○	○	○	○
	XBF-DC04A	×	○	○	○	○
Mixed	XBF-DC04C	○	○	○	○	○
RTD	XBF-DV04A	○	○	○	○	○
TC	XBF-DV04C	○	○	○	○	○
Position	XBF-AH04A	×	×	×	×	×

Modbus TCP, EtherNet/IP Specification

Item		Specification
International standard		IEEE 802.3
Protocol		Modbus TCP, EtherNet/IP
Topology		Line(Daisy-Chain), Star
Max. Protocol size		1500bytes
Flow control		Full duplex, Half duplex
Baud rate		10/100Mbps
Max. Distance between node		100m
Communication port		RJ-45 (2Ports, Switch Built-in)
IP Setting		Software setting
Number of Expansion I/O		8
Slots		64bytes (Input: 32bytes/Output: 32bytes)
I/O Data size		32chs (Input: 16chs/Output: 16chs)
Max. Analog channels		19.2V ~ 28.8V
Power	Input	5V(±20%)/1.5A
	Output	100g

* When I/O module is installed, check the current consumption (Max. Current: 1.5A)

DeviceNet specification

Item		Specification		
Communication Mode		Poll, Bit-strobe, COS, Cyclic		
Topology		Bus, Trunk and Drop		
Master/Slave		Slave		
Baud rate/ Distance	kbps	125	250	500
	m	500	250	100
Max. Node Number (MAC ID)		64 (0~63)		
		8		
Number of Expansion I/O		64bytes (Input: 32bytes/Output: 32bytes)		
Slots		32chs (Input: 16chs/Output: 16chs)		
I/O Data Size		19.2V ~ 28.8V		
Max. Analog Channels		5V(±20%)/1.5A		
Power	Input	100g		

* When I/O module is installed, check the current consumption (Max. Current: 1.5A)

Profibus-DP Specification

Item		Specification				
Media Access		Poll				
Topology		Bus				
Master/Slave		Slave				
Baud rate/ Distance	kbps	9.6	19.2	93.75	187.5	500
	m	1200	1200	1200	1000	400
	kbps	1500	3000	6000	12000	-
	m	200	100	100	100	-
Max. Node Number		100 (0~99)				
Number of Expansion I/O		8				
Slots		64bytes (Input: 32bytes/Output: 32bytes)				
I/O Data Size		32chs (Input: 16chs/Output: 16chs)				
Max. Analog Channels		19.2V ~ 28.8V				
Power	Input	5V(±20%)/1.5A				
	Output	100g				

* When I/O module is installed, check the current consumption (Max. Current: 1.5A)

LSIS Automation Products

iXP Series

Human Machine Interface

Graphic type iXP50/iXP70/iXP80/iXP90

- 1GHz 32bit RISC Embedded CPU
- 16,777,216 TFT color LCD
- 128MB display data and 1MB back-up memory
- Ethernet 1ch, RS-232C 2ch, RS-422/485 1ch
- USB host 3ch and device 1ch
- SD memory card interface
- PLC ladder monitoring (XGK/XBC PLC only)
- Web Server/Data Server
- Path through
- XP-Remote: Remote controlling and monitoring

			iXP70-TTA/DC iXP70-TTA/AC	iXP80-TTA/DC iXP80-TTA/AC	iXP90-TTA/DC iXP90-TTA/AC
Display type		TFT color LCD			
Screen size		21.3cm (8.4″)	26.4cm (10.4″)	30.7cm (12.1″)	38.1cm (15″)
Display Resolution		800×600 pixel (SVGA)	800×600 pixel (SVGA)	800×600 pixel (SVGA)	1,024×768 pixel (SVGA)
Color indication		16-bit and 24-bit Color (default: 16-bit Color)			
Indication degree		Left/Right: 80 deg. Up: 80 deg. Down: 60 deg.	Left/Right: 80 deg. Up: 60 deg. Down: 80 deg.		
Backlight		LED Type			
Backlight duration		70,000 hours	60,000 hours		
Brightness		500 cd/㎡	700 cd/㎡	550 cd/㎡	800 cd/㎡
Touch panel		4-Line type, analog			
Sound Output		Magnetic buzzer (85dB)			
Process		ARM Cortex-A8 Core (32bit RISC), 1GHz			
Memor	Flash	512MB(display 128MB)	1GB(display 128MB)		
	Operating RAM	256MB	512MB		
	Backup RAM	1MB			
Backup data		Date/Hour data, Logging/Alarm/Recipe data and nonvolatile device			
Battery duration		Approx. 3 years (Operating ambient temperature of 25℃)			
Ethernet		1 channel, 10/100BASE-TX			
USB Host		3 channels, USB 2.0 host (mouse, keyboard, printer* and USB memory driver is available)			
		1 channel, USB 2.0 slave (for download and upload project file)			
RS-232C		1 channel			
RS-422/485		1 channel, RS-422/485 mode			
SD Card		1 Slot (SDHC)			
Human sensor		-	Detection range: side 1-1.5m, front 40-50cm Angle: high/low 100°, left/right 140° (detecting 5-20 micron infrared light)		
Audio output		LINE-OUT 1 channel			
Expansion module		For communication and I/O option module (available later)			
VM module		-	4 channels video input (available later)		
Multi-language		Up to 12 language simultaneously			
Animation		GIF format is available			
Recipe		available			
Data logging		available			
Script executor		available			
Certifications		CE, UL(cUL), KC			
Protection standard		IP65			
Dimension (mm)		240.5×180.0×54.4	270.5×212.5×60.0	313.0×239.0×56.0	395.0×294.0×60.0
Panel cut (mm)		228.5×158.5	259.0×201.0	301.5×227.5	383.5×282.5
Rated voltage		DC24V	DC12/24V (AC 100-240V)		
Power consumption (W)		30.8	42.3	42.3	42.3
Weight (Kg)		1.9	2.2	2.4	3.9

* SEWOO printer only

eXP Series

Human Machine Interface

Graphic type eXP20/eXP40/eXP60

- TFT LCD-applied wide type
- LED Backlight adopted for enhanced contrast ratio and low-power
- PLC Ladder monitoring function: Only XGK/XBC supports*
- Web Server* / Data Server* / Path-Through Function*
- Remote Viewer Function*
- Screen editor : XP-Builder

* Functions that support only the TTA model

Item		eXP20-TTA/DC	eXP40-TTE/DC	eXP40-TTA/DC	eXP60-TTA/DC
Display Type		TFT color LCD			
Display Size		10.9cm (4.3 inch)	17.7cm (7 inch)		25.9cm (10.2 inch)
Resolution		480 x 272 (WQVGA)	800 x 480 (WVGA)		
Color		16.7M colors			65,536 colors
Display Angle		Left/Right: 60 deg. Up: 40 deg. Down: 60 deg.			Left/Right: 55 deg. Up: 35 deg. Down: 55 deg.
Backlight		LED mode, Auto On/Off			
Backlight Capacity		30,000 hr or more	20,000 hr or more		
Brightness (LCD)		550 cd/㎡	500 cd/㎡		350 cd/㎡
Touch Panel		4-wire system, Analogue			
Sound		Magnetic buzzer (85dB)			
Processor		ARM9 Core (32bit RISC), 454MHz			
Memory	Flash	128MB(Screen 64MB)			
	Operation RAM	128MB			
	Backup RAM	128KB			
Backup Type		Date/Time data, Logging/Alarm/Recipe data, non-volatile device			
Battery Capacity		Around 3 years (Upon operation at 25℃)			
RTC Function		Built-in			
Ethernet		1 channel, 10/100BASE-TX	-	1 channel, 10/100BASE-TX	
USB Port		1 channel, USB 2.0 host (mouse, keyboard, printer* and USB memory driver is available)			
		-	1 channel, USB 2.0 slave (for download and upload project file)		
RS-232C		1 channel			
RS-485		-	1 channel		
RS-422/485		1 channel, 422/485 Combination			
Multi-language		Up to 12 language simultaneously			
Animation		GIF format is available			
Recipe		available			
Data logging		available			
Script executor		available			
Certification		CE, UL(cUL), KC			
Protection		IP65			
Size (mm)		128.0×102.0×32.0	208.0×154.0×44.0		276.0×218.0×44.2
Panel Cut (mm)		119.0×93.0	192.0×138.0		260.0×202.0
Power		DC24V			
Power Consumption (W)		7.1	23.1		
Weight (kg)		0.3	0.59	0.60	1.0

* SEWOO printer only

LSIS Automation Products

XP Series

Human Machine Interface

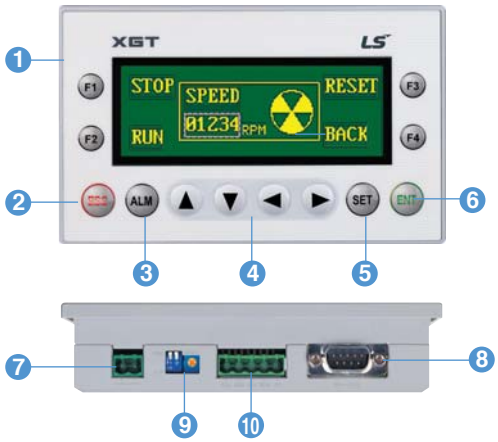
Graphic type XP30/XP40/XP50/XP70/XP80/XP90

- High and vivid distinction with 65,536 colors
- High quality raster and vector symbols
- Various BMP JPG GIF graphic file support: BMP, JPG, GIF, WMF, etc
- Simple animation effects: animated GIF
- 10/100BASE-T Ethernet interface
- Convenient and easy screen editing
- Strengthened data management: Logging, Recipe, and Alarm
- Read function of a controller's state information: Monitoring and maintenance
- Multi-lingual display: up to 8 languages
- Offline and concurrent simulation with XG5000
- Easy to change the address of the graphic objects: Tag function with XP-Builder
- USB host for peripheral devices: USB Drive, Mouse, keyboard, printer, etc
- Sufficient memory for screen data: 10MB

Model Type								XP50-	XP70-TTA/AC	XP80-TTA/AC	
		Mono		Color							
Display Element		Mono Blue LCD		TFT Color LCD							
Screen Size		14cm (5.7")				17.7cm (7")		21cm (8.4")	26cm (10.4")	31cm (12.1")	38cm (15")
Resolution		320×240				800×480		640×480		800×600	1024×768
Color		8-column Gray Scale		256 colors	65,536 colors	65,536 colors					
Backlight		LED mode						CCFL(can be replaced), Auto On/Off			
		50,000 hours			60,000 hours	30,000 hours		50,000 hours			60,000 hours
Contrast		Adjustable		Fixed							
Brightness		230cd/㎡			600cd/㎡	280cd/㎡		480cd/㎡	430cd/㎡	400cd/㎡	450cd/㎡
Viewing Angle	Up/Down (Degree)	20/40		80/80	70/70	50/60		50/60	45/65	45/75	60/50
	Left/Right (Degree)	45/45		80/80		65/65		65/65	65/65	65/65	75/75
Touch Panel		4-wire system, analogue				Analog resistive		8-wire system, analogue			
Movement LED		Green: Normal RUN (Monitoring & drawing data download) Red: Error (Communication error & drawing data error)									
Memory	Screen Data	4MB	10MB	4MB	10MB	4MB	10MB	10MB			20MB
		128KB	512KB	128KB	512KB	128KB	512KB				
Ethernet		-	1ch, 10/100Base-T	-	1ch, 10/100Base-T	-	1ch, 10/100Base-T				
USB Interface		USB Host X 1	USB Host X 2	USB Host X 1	USB Host X 2	USB Host X 1		USB Host X 2			
Serial	RS-232C	2ch(1 port for PC communication)									
		1ch, 422/485 optional mode									
CF Card Interface		-	CF card (TAPE-1)×1	-	CF card (TAPE-1)×1	-		CF card (TAPE-1)×1			
AUX Interface		-	Optional	-	Optional	-		Optional			
Certification		CE, UL, KC									
Protection		IP65 (Front Water Proof Structure)									
Size (W×H×D) mm		181 x 140 x 56.5	181 x 140 x 66.5	181 x 140 x 56.5	181 x 140 x 66.5	203.5 x 153.5 x 41.5		240 x 174 x 73	317 x 243 x 73		395 x 294 x 73
Panel Cut (W×H) mm		155.0 x 123.5				192 x 138		228.5 x 158.5	294.5 x 227.5		383.5 x 282.5
Weight (kg)		0.62	0.75	0.62	0.75	2.2	2.4	1.4	2.2	2.4	3.9
Power	Permitted AC	DC 24V							AC100~220V, DC 24V		AC100~220V
		-							MIN 85 VAC, MAX 264 VAC		
	DC	MIN 19.2 VDC, MAX 28.8 VDC									–
	Power Consumption AC	–							21.8	31.9	31.9
		9.7	16.9	9.6	17.4	9.8	9.8	18.7	20.1	25.7	–

Text type XP10

- Screen: 192×64 Graphic STN LCD
- System RAM: 1000 words
- Flash memory: Program/Parameter back up
- Communication: Half-duplex comm.
  - Baud rate: 1200~115200 bps
  - Master/slave setting available
  - RS-232C/RS-485 2 ch separate to use
- Power reguirements - 24 V input or 5 V direct input by LS PLC
- Various function key - ESC, ALM, SET, ENT, F1~F4, Arrow keys
- Panel Editor - Easy programming and H/W setting



1. Key to control PLC device and screen
2. ESC key
3. Alarm history
4. Data input and Screen change
5. PLC data setting
6. Enter key
7. DC24V input terminal
8. RS-232C port to download a project
9. Brightness adjustment
10. RS-422 port

Item		Specifications	
		XP10BKA/DC	XP10BKB/DC
Input voltage	5VDC	DC 4.9 ~ 5.1 (RS-232C port)	
	24VDC	DC 21.6 ~ 26.4 (DC Input connector)	
	Consumption current	Less than 200mA	
Display		LED back-light (192 x 64 Dots)	
Communication interface		RS-232C, RS-422/485	
Flash memory		256K bytes	
Language		Default: English, Can be switched to Korean/Chinese/Russian	
RTC		None	Supports
Download specification		115,200bps	
Keys		12 Keys (F1~F4, ESC, ALM, ▲, ▼, ◀, ▶, SET, ENT)	

LSIS Automation Products

XGT Servo

XDL/XML Series

Inetllingent Control

The interface of the convenient and user oriented function

Enhanced user friendly function through Serial communication (RS-422), Parameter transmission using PC loader, etc.

High Performance

High Resolution Serial type Encoder (16Bit~21Bit)

- Accurate Position Control and Improved Stability at Low Speed

Stable Low Speed Operation with Accurate Speed Check

- Stable Measurement at Low Speed

Absolute Encoder (Multi-turn)

- Origin Function is not needed

Improved Speed Response Frequency

- About 1kHz
- Reduced Positioning Time

Convenience

Motion Network Type(EtherCAT) - XDL N Series

High Performance

- High speed, Real-time capability and Synchronization mechanism

Open Network

- Over 1600 worldwide members

Cost Effective

- Standard Ethernet Cabling + Connectors, Less implementation efforts for master and slave

Easy to Use

- Versatile topology and Diagnostics

XDL Drive with Built-in EtherCAT Interface

- 100BASE-TX(100Mbps) Ethernet based real-time communication
- Support CiA402(IEC61800-7) drive profile
- Interoperability
- Precise synchronization mechanism (1us)
- Max. 100m between nodes
- Freely settable process data length and mapping
- Four status indication LEDs (L/A0, L/A1, RUN, ERR)
- Standard RJ45 connector and cabling(CAT5)
- Have intrinsic functions of XDL S series (same size)
- Support various homing modes
- Support Full-Closed control (Being developed)

Support various operation modes

- CSP, CSV, CST, PP, PV, PT, HM, IP

Safe Torque Off function

- Forced torque off by HWBB signals without intervention of μP and FPGA(ASIC), International standard(IEC61508)

Versatile I/O assignment by parameters

- 6 inputs, 4 outputs

High speed position capture function

- Touch probe function(PROBE1, PROBE2)

Provide specialized commissioning tools by LSIS's XGT PLC

- Tune inertia ratio, velocity/position gains, gain conversion configuration

Have conformity of EtherCAT device

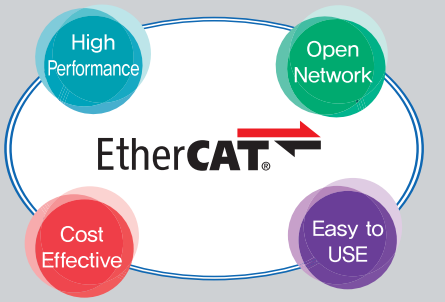
- In-house test using CTT(Conformance Test Tool)

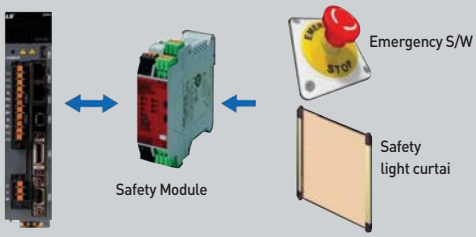
Support scaling objects for position, velocity and acceleration

- Numerator and denominator

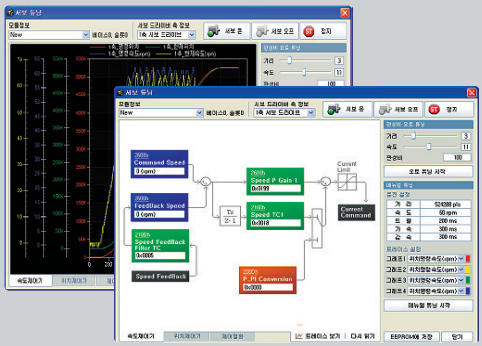
Provide Gain Tuning Tools and Commissioning Packages

- Automatic inertia tuning and PI gains
- Gain conversion setting
- Manual fine gain tuning tool
- Object save and initialization function
- Alarm history function(recently issued 20 alarm codes)





LSIS XGT PLC + PN8B



Servo Drive

Product Features

Standard Type

Item \ Model			XDL-L7SA001□	XDL-L7SA002□	XDL-L7SA004□	XDL-L7SA008□	XDL-L7SA010□	XDL-L7SA020□	XDL-L7SA035□	XDL-L7SA050□
Input Power	Main Power Supply		3 Phase AC200 ~ 230[V][-15 ~ +10[%]], 50 ~ 60[Hz]							
	Control Power Supply		Single Phase AC200 ~ 230[V][-15 ~ +10[%]], 50 ~ 60[Hz]							
Rated Current [A]			1.4	1.7	3.0	5.2	6.75	13.5	16.7	32
Peak Current [A]			4.2	5.1	9.0	15.6	20.25	40.5	50.1	96
Encoder Type			Quad. Type Incremental Line Driver Max 10000[P/R] Serial Type 19Bit							
Performance	Speed Control	Speed Control Position	Max. 1 : 5000							
		Frequency Response	Max. 1[kHz] or above (When using 19bit Serial Encoder)							
		Analog Speed Command	DC-10[V]~+10[V] (Reverse rotation in case of - voltage)							
		Accel/Decel Time	Linear or S-Shape Accel/Decel. (0~10,000[ms], Setting 1[ms] is possible)							
		Speed Variation Ratio	±0.01[%] or less [at Load variation 0 ~ 100%], ±0.1[%] or less [at Temp. 25±10°C]							
	Position Control	Input Frequency	1[Mpps], Line Driver / 200[kpps], Open Collector							
		Input Pulse Type	+Pulse, CW+CCW, A/B Phase							
		Electric Gear Ratio	Setting and selecting 4 digital electric gear ratio, Precise adjustment is possible							
	Torque Control	Analog Torque Command	DC -10 ~ +10[V] (Reverse rotation in case of - voltage)							
		Speed Limit	DC 0 ~ +10[V], within ±1[%] of internal speed command							
		Repeatability	±1[%] or less							
Input/Output Signal	Analog Input	Input Range	DC -10 ~ +10[V]							
		Resolution	12[bit]							
	Digital Input		Total 10 Input Channels (assignment available) SVON, SPD1, SPD2, SPD3, ALMRST, DIR, CCWLIM, CWLIM, EMG, STOP, EGEAR1, EGEAR2, PCON, GAIN2, P_CLR, T_LMT, MODE, ABS_RQ, ZCLAMP Above 19 functions can be inputted selectively for assignment Signal can be set as positive logic or negative logic							
	Digital Output		Total 5 Channels (assignment available), 3 Channels (set as alarm code) ALARM, READY, ZSPD, BRAKE, INPOS, TLMT, VLMT, INSPD, WARN Above 9 outputs can be inputted selectively for assignment Signal can be set as positive logic or negative logic							
Comm-unication	RS-422		PC Software and RS422 Server are available							
	USB		Status monitoring, JOG operation, parameter upload/download are available with PC Software							
Encoder			Compatible with Serial BiSS encoder, Quadrature encoder							
Encoder Output Type			Random pre-scale output by FPGA (Max. 6.4Mpps)							
Built-in Function	Dynamic Braking		Built-in type (operates when Servo alarm or Servo off)							
	Regenerative Braking		Built-in type, and also external connection is available							
	Display		7 segments (5DIGIT)							
	Setting Function		Loader ([SET], [MODE], [UP], [DOWN] key)							
	Additional Function		Automatic gain tuning function, Z-phase detection, manual JOG operation, program JOG operation, analog-input auto Calibration function							
	Protective Function		Overcurrent, overload, overvoltage, insufficient voltage, main power input problem, contorl power input problem, overspeed, motor cable, overheat(power module overheat, abnormal drive operation's temp), encoder problem, over-regenerative, sensor problem, communication problem							
Operation Environment	Temperature		0 ~ 50[°C]							
	Humidity		Below 90[%]RH (avoid dew-condensation)							
	Ambient		Indoor, avoid corrosive, inflammable gas or liquid and electrically conductive dust.							

LSIS Automation Products

Servo Drive

Product Features

Network Type

Item		Model	XDL-L7NA001B	XDL-L7NA002B	XDL-L7NA004B	XDL-L7NA008B	XDL-L7NA010B	XDL-L7NA020B	XDL-L7NA035B
Input Power	Main Power Supply		3 Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
	Control Power Supply		Single Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
Rated Current [A]			1.4	1.7	3.0	5.2	6.75	13.5	16.7
Peak Current [A]			4.2	5.1	9.0	15.6	20.25	40.5	50.1
Encoder Type			Serial 17Bit / 19Bit / 21Bit						
Performance	Speed Control Position		Max. 1 : 5000						
	Frequency Response		Max. 1[kHz] or above (When using 19bit Serial Encoder)						
	Analog Speed Command		±0.01[%] or lower(When the load changes between 0 and 100%), ±0.1[%] or less(Temperature of 25_[±10]						
	Torque Control Repetition		Within ±1%						
Supported Drive Modes (CiA402)			Profile Position Mode Profile Velocity Mode Profile Torque Mode Interpolated Position Mode Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode Cyclic Synchronous Torque Mode Homing Mode						
Input/Output Signal	Digital Input		Total 6 Input Channels (assignment available) PCON, GAIN2, ALMRST, HOME, P-OT, N-OT Above 6 functions can be inputted selectively for assignment Signal can be set as positive logic or negative logic						
	Touch Probe Digital Input		2 input channels Providing rising and falling edge detection functions for each channel.						
	Digital Output		Total 4 Channels (assignment available) ALARM, READY, ZSPD, BRAKE, INPOS, INSPD, WARN 7 outputs can be inputted selectively for assignment Signal can be set as positive logic or negative logic						
Communicatio	USB		Program download is available with USB Communication.						
Built-in Function	Dynamic Braking		Built-in type(operates when Servo alarm or Servo off)						
	Regenerative Braking		Built-in type, and also external connection is available						
	Display		7 segments(5DIGIT)						
	Setting Function		The [MODE] key changes the content displayed in 7 segments.						
	Additional		Auto gain tuning function						
	Protective Function		Overcurrent, overload, overvoltage, insufficient voltage, main power input problem, contorl power input problem, overspeed, motor cable, overheat(power module overheat, abnormal drive operation's temp), encoder problem, over-regenerative, sensor problem, communication problem						
Operation Environment	Temperature		0 ~ 50[°C]						
	Humidity		Below 90[%]RH (avoid dew-condensation)						
	Ambient Environment		Indoor, avoid corrosive, inflammable gas or liquid and electrically conductive dust.						

NH Type

Item \ Type Name		XDL-L7NHA001U	XDL-L7NHA002U	XDL-L7NHA004U	XDL-L7NHA008U	XDL-L7NHA010U	XDL-L7NHA020U	XDL-L7NHA035U
Input Power	Main Power Supply	3 Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
	Control Power Supply	Single Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
Rated Current[A]		1.4	1.7	3.0	5.2	6.75	13.5	16.7
Peak Current[A]		4.2	5.1	9.0	15.6	20.25	40.5	50.1
Encoder Type		Quadrature(Incremental) BiSS-B, BiSS-C(Absolute, Incremental) Tamagawa Serial(Absolute, Incremental) EnDat 2.2						
Control Performance	Speed Control Range	Maximum 1: 5000						
	Frequency Response	Maximum 1[kHz] or above(When the 19-bit Serial Encoder is applied)						
	Speed Variation Ratio	±0.01[%] or lower(When the load changes between 0 and 100%) ±0.1[%] or less(Temperature of 25℃[±10]						
	Torque Control Repetition Accuracy	Within ±1%						
EtherCAT Communication Specifications	Communication Standard	FoE (Firmware download) EoE (Parameter setting by UDP, Tuning, Secondary function, Parameter copy) CoE (IEC 61158 Type12, IEC 61800-7 CIA 402 Drive profile)						
	Physical Layer	100BASE-TX(IEEE802.3)						
	Connector	RJ45 x 2						
	Communication distance	Within connection between nodes 100[m]						
	DC(Distributed Clock)	By DC mode synchronism. minimum DC cycle: 250[us]						
	LED Display	LinkAct IN, LinkAct OUT, RUN, ERR						
	Cia402 Drive Profile	Profile Position Mode, Profile Velocity Mode Profile Torque Mode, Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode, Cyclic Synchronous Torque Mode Homing Mode						
Digital Input/ Output	Digital Input	Input Voltage range : DC 12[V] ~ DC 24[V] Total 8 input channels (allocable) Above 12 functions can be used selectively for assignment. (*POT, *NOT, *HOME, *STOP, *PCON, *GAIN2, *P_CL, *N_CL, PROBE1, PROBE2, EMG, A_RST) *Basic allocation signal						
	Digital Output	Service rating: DC 24[V] ±10%, 120[㎃] Total 4 input channels (allocable) Above 11 functions can be used selectively for assignment. (*BRAKE±, *ALARM±, *READY±, *ZSPD±, INPOS±, TLMT±, VLMT±, INSPD±, WARN±, TGON±, INPOS±) *Basic allocation signal						
Analog Monitor		There are 2 input channels. Above 15 functions can be used selectively for assignment.						
Safety Function		2 Input Channels (STO1, STO2), 1 Output Channels (EDM±)						
USB Communication	Function	Firmware download, Parameter setting, Tuning, Secondary function, Parameter copy						
	Communication Standard	USB 2.0 Full Speed (applies standard)						
	Connect	PC or USB storing medium						
Internal Function	Dynamic Braking	Standard built-in brake (activated when the servo alarm goes off or when the servo is off).						
	Regenerative Braking	Both the default built-in brake and an externally installed brake are possible.						
	Display Function	7 segments(5DIGIT)						
	Self-setting Function	The [MODE] key changes the content displayed in 7 segments						
	Additional Function	Auto gain tuning function						
	Protection Function	Overcurrent, overload, overvoltage, insufficient voltage, main power input problem, control power input problem, overspeed, motor cable, overheat(power module overheat, abnormal drive operation's temp), encoder problem, over-regenerative, sensor problem, communication problem						
Environment	Temperature	0 ~ +50[℃] / -20~ +70[℃]						
	Humidity	Below 90[%]RH(avoid dew-condensation)						
	Environment	Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.						

LSIS Automation Products

Servo Drive

Product Features

NH Type

Item \ Type Name		XDL-L7NHB001U	XDL-L7NHB002U	XDL-L7NHB004U	XDL-L7NHB008U	XDL-L7NHB010U	XDL-L7NHB020U
Input Power	Main Power Supply	3 Phase AC200 ~230[V](-15 ~ +10[%]), 50 ~ 60[Hz]					
	Control Power Supply	Single Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]					
Rated Current[A]		3.7	8	10.1	17.5	22.8	39
Peak Current[A]		11.1	24	30.3	47.25	57	97.5
Encoder Type		Quadrature(Incremental) BiSS-B, BiSS-C(Absolute, Incremental) Tamagawa Serial(Absolute, Incremental) EnDat 2.2					
Control Performance	Speed Control Range	Maximum 1: 5000					
	Frequency Response	Maximum 1[kHz] or above(When the 19-bit Serial Encoder is applied)					
	Speed Variation Ratio	±0.01[%] or lower(When the load changes between 0 and 100%) ±0.1[%] or less(Temperature of 25°C[±10]					
	Torque Control Repetition Accuracy	Within ±1%					
EtherCAT Communication Specifications	Communication Standard	FoE (Firmware download) EoE (Parameter setting by UDP, Tuning, Secondary function, Parameter copy) CoE (IEC 61158 Type12, IEC 61800-7 CIA 402 Drive profile)					
	Physical Layer	100BASE-TX(IEEE802.3)					
	Connector	RJ45 x 2					
	Communication distance	Within connection between nodes 100[m]					
	DC(Distributed Clock)	By DC mode synchronism. minimum DC cycle: 250[us]					
	LED Display	LinkAct IN, LinkAct OUT, RUN, ERR					
	Cia402 Drive Profile	Profile Position Mode, Profile Velocity Mode Profile Torque Mode, Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode, Cyclic Synchronous Torque Mode Homing Mode					
Digital Input/ Output	Digital Input	Input Voltage range : DC 12[V] ~ DC 24[V] Total 8 input channels (allocable) Above 12 functions can be used selectively for assignment. (*POT, *NOT, *HOME, *STOP, *PCON, *GAIN2, *P_CL, *N_CL, PROBE1, PROBE2, EMG, A_RST) *Basic allocation signal					
	Digital Output	Service rating: DC 24[V] ±10%, 120[㎃] Total 4 input channels (allocable) Above 11 functions can be used selectively for assignment. (*BRAKE±, *ALARM±, *READY±, *ZSPD±, INPOS±, TLMT±, VLMT±, INSPD±, WARN±, TGON±, INPOS±) *Basic allocation signal					
Analog Monitor		There are 2 input channels. Above 15 functions can be used selectively for assignment.					
Safety Function		2 Input Channels (STO1, STO2), 1 Output Channels (EDM±)					
USB Communication	Function	Firmware download, Parameter setting, Tuning, Secondary function, Parameter copy					
	Communication Standard	USB 2.0 Full Speed (applies standard)					
	Connect	PC or USB storing medium					
Internal Function	Dynamic Braking	Standard built-in brake (activated when the servo alarm goes off or when the servo is off).					
	Regenerative Braking	Both the default built-in brake and an externally installed brake are possible.					
	Display Function	7 segments(5DIGIT)					
	Self-setting Function	The [MODE] key changes the content displayed in 7 segments					
	Additional Function	Auto gain tuning function					
	Protection Function	Overcurrent, overload, overvoltage, insufficient voltage, main power input problem, control power input problem, overspeed, motor cable, overheat(power module overheat, abnormal drive operation's temp), encoder problem, over-regenerative, sensor problem, communication problem					
Environment	Temperature	0 ~ +50[°C] / -20~ +70[°C]					
	Humidity	Below 90[%]RH(avoid dew-condensation)					
	Environment	Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.					

P Type

Item \ Type Name		XDL-L7PA001U	XDL-L7PA002U	XDL-L7PA004U	XDL-L7PA008U	XDL-L7PA010U	XDL-L7PA020U	XDL-L7PA035U
Input Power	Main Power Supply	3 Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
	Control Power Supply	Single Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
Rated Current[A]		1.4	1.7	3.0	5.2	6.75	13.5	16.7
Peak Current[A]		4.2	5.1	9.0	15.6	20.25	40.5	50.1
Encoder Type		Quadrature(Incremental) BiSS-B, BiSS-C(Absolute, Incremental) Tamagawa Serial(Absolute, Incremental) EnDat 2.2						
Control Performance	Speed Control Range	Maximum 1: 5000						
	Frequency Response	Maximum 1 [kHz] or above (When using 19bit Serial Encoder)						
	Speed Variation Ratio	±0.01 [%] or lower [when load changes between 0 and 100%] ±0.1[%] or lower [temperature 25 ±10℃]						
	Accel/Decel Time	Straight or S-curve acceleration/deceleration (0~10,000[ms], 0~1,000[ms] Unit configurable)						
	Input Frequency	1[Mpps], line drive / 200[kpps], Open Collector						
	Input Pulse Type	Symbol + Pulse Series, CW+CCW, A/B Phase						
RS422 Communication Specifications	Communication Specifications	ANSI/TIA/EIA-422 Standard Specifications						
	Communication Protocol	MODBUS-RTU						
	Connector	RJ45 x 2						
	Synchro Method	Asynchronous						
	Transmission Speed	9600 /19200/38400/57600 [bps] Can be configured at [0x3002]						
	Transmission Distance	Maximum 200 [m]						
	Power Consumption	100[㎃]						
	Terminating Resistance	Dip S/W(On/Off), Built-In 120Ω						
Input/Output Signal	Digital Input	Input voltage range: DC 12[V] ~ DC 24[V] Total 16 input channel (allocatable) 32 function inputs can be selectively allocated (*SV_ON, *POT, *NOT, *A-RST, *START, *STOP, *REGT, *EMG, *HOME, *HSTART, *ISEL0, *ISEL1, *ISEL2, *ISEL3, *ISEL4, *ISEL5, PCON, GAIN2, P_CL, N_CL, MODE, PAUSE, ABSRQ, JSTART, JDIR, PCLR, AOVR, SPD1/LVSF1, SPD2/LVSF2, SPD3, PROBE1, PROBE2) * Basic allocation signal.						
	Digital Output	Use rating: DC 24[V] ±10%, 120[ßÃ] Total 8 input channel (allocatable) 19 function inputs can be selectively allocated (*ALARM±, *READY±, *BRAKE±, *INPOS1±, *ORG±, *EOS±, *TGON±, *TLMT±, VLMT±, INSPD±,ZSPD±, WARN±, INPOS2±, IOUT0±, IOUT1±, IOUT2±, IOUT3±, IOUT4±, IOUT5±) * Standard Allocation signal						
Analog Input/output	Analog input	Total 2 channels analog speed override input(-10[V] ~ +10[V]) analog torque command input(-10[V] ~ +10[V])						
	Analog output	Total 2 channels 15 function inputs can be selectively allocated						
USB Communication	Protection	Firmware download, parameter setting, tuning, auxiliary function,parameter copy						
	Communication Specifications	Complies with USB 2.0 Full Speed Specifications						
	Connection Device	PC or USB storage media						
Built-in functions	Dynamic Braking	Standard built-in(activated by servo alarm or servo OFF)						
	Regenerative Braking	Built-in, external brake attachable						
	Display	7 Segment(5 DIGIT)						
	Setting Function	Drive node address can be set using rotary switch						
	Additional Function	Gain tuning, alarm history, JOG operation, origin search						
	Protective Function	Excessive current, overload, excessive current limit, overheating, excessive voltage, low voltage, excessive speed, encoder fail, position following fail, current sensing fail						
Environment	Temperature	0 ~ 50[℃] / -20 ~ 65℃						
	Humidity	Below 90[%]RH(avoid dew-condensation)						
	Environment	Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.						

LSIS Automation Products

Servo Drive

Product Features

PEGASUS (Hybrid type)

Rated Values of Servo Drive

Rated	□40 50W	□40 100W	□60 100W	□60 200W	□60 300W
Continuous output current [Arms]	1.77	2.38	3.62	5	6.8
Maximum output current [Arms]	3.54	3.75	7.24	10	13.6
Input voltage	DC 48V ~ DC 60V				

Basic Specifications

Category			Details
Use conditions	Control method		PWM controlled sine wave current driving method
	Operating temperature /storage temperature		0~+40[℃] / -20~ +60[℃]
	Operating humidity /storage humidity		Below 80% RH / Below 90% RH (no freeze or condensation)
	Vibration-/impact-resistance		TBD
	Degree of protection /degree of pollution		TBD
	Altitude		1000m or lower
	Other		To be free from electrostatic noise, strong electrolysis, or radiation.
Performance	Speed variation	Load variation	At 0 to 100% load: ± 3% (at rated speed)
		Voltage variation	Rated voltage ±10%: 0% (at rated speed)
		Temperature variation	25℃: ±0.1% or less (at rated speed)
Input/ output signal	Input signal		Input voltage range: DC 12 V - DC 30 V The 4-channel input signal can be assigned to 12 functions: POT, NOT, HOME, STOP, PCON, GAIN2, PCL, NCL, PROBE1, PROB2, EMG, and ARST.
	Output signal		Rated voltage and current: DC 24 V ±10%, 120 [㎃] The 2-channel output signal can be assigned to 11 functions: BRAKE, ALARM, RDY, ZSPD, INPOS1, TLMT, VLMT, INSPD, WARN, TGON, and INPOS2.
Analog Monitor			Number of channels: 1, Output voltage range: ±4V, Angular resolution: 12 bits, Stabilization time: 15 us
USB communica-tion	Connecting device		PC or USB storage medium
	Communication standard		Conform to the USB 2.0 Full Speed Standard.
	Function		Firmware download, parameter setting, adjustment, auxiliary functions, and parameter copy function.
Dynamic brake (three-phase short-circuit)			Activates when servo alarm, servo OFF, or Emergency stop (POT, NOT and EMG) is input.
Protection functions			Overcurrent, overload, current limit, overheat, overvoltage, undervoltage, overspeed, encoder error, position follow error, ect.
Auxiliary functions			Gain adjustment, alarm history, JOG drive, programmed JOG drive, etc.
Safety functions	Input		STO1 and STO2
	Compatible standard		TBD

EtherCAT Communication Specification

Category		Details
Communication standard	FoE	Firmware download
	EoE	Parameter setting, adjustment, auxiliary functions, and parameter copy through UDP.
	CoE	IEC 61158 Type12, IEC 61800-7 CiA 402 drive profile
Physical layer		100BASE-TX(IEEE802.3)
Connector		RJ45 x 2
Distance		Within 100 m between nodes
DC (Distributed Clock)		Sync by DC mode
LED Display		• L/A0(Link/Act IN) • L/A1(Link/Act OUT) • RUN • ERR
Cia402 drive Profile		Supports CSP, CSV, CST, PP, PV, PT, and HM Modes.

Encoder Specification

Category	Details
Encoder Type	Magnetic Encoder (12bit)

Motor Specification

Model	Unit	□40 50W	□40 100W	□60 100W	□60 200W	□60 300W
Rated Torque	[Kgf cm]	1.62	3.25	3.25	6.50	9.74
Max. Torque	[Kgf cm]	3.24	4.88	6.50	13.0	19.48
Rated Speed	[rpm]	3000	2400	3000	3000	3000
Max Speed	[rpm]	3000	3000	3000	3000	3000
Inertia	[Kgm^2x10-4]	0.0240	0.0450	0.114	0.182	0.321

FUTURING SMART ENERGY

Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance.
  Do not disassemble or repair by yourself !
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

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