Programmable Logic Controller

LS PLC Series

XGT / GLOFA-GM / MASTER-K

LS IS

XGT Family

XGT PLC High performance

XGR

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

XGK: Ladder programming

- CPU processing speed: 28ns/step
- I/O point: max. 6,144
- Various type of CPU E/S/A/H/U (16K/32K/32K/64K/128Ksteps)
- Integrated intelligent Software package : XG5000
- System solution based on open network: Ethernet, Profibus, DeviceNet
- Built-in PID control

XGI: IEC standard programming

- CPU processing speed: 28ns/step
- I/O point: max. 6,144
- Various type of CPU S/H/U (128K/512K/1Mbytes)
- IEC 61131-3 Standard programming
  - LD (Ladder Diagram), SFC (Sequential Function Chart), ST (Structured Text)
  - User defined FB (Function Block)
- Built-in 256 PID loops control

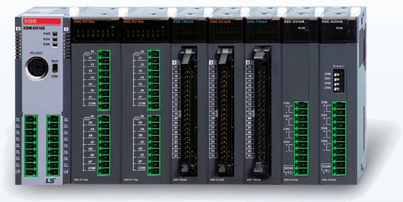
XGK / XGI

* Programming language selection via CPU replacement

Block type (XGB Series)

XBM: Connector type

- Programming language: Ladder
- CPU processing speed: 160ns/step
- Max. 256-point I/O control
- Program Capacity: 10Ksteps
- Floating-Point Arithmetic
- Built-in Cnet, HSC, PID, Positioning, Pulse catch, Input filter, External Interrupt
- Expansion Cnet, Ethernet



XBM

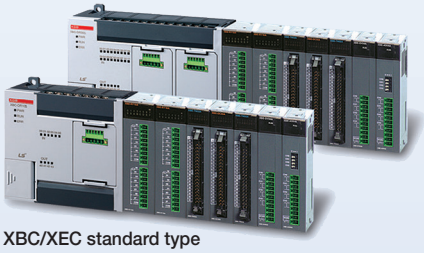
XBC/XEC: Terminal block type

- Supporting floating-point arithmetic
- Built-in Cnet, HSC, PID, Positioning, Pulse catch, Input filter, External Interrupt
- Expansion Cnet, Ethernet
- Download port: Serial, USB

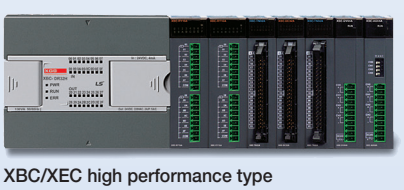
XBC economic type

XBC/XEC

- Economic type
  - CPU processing speed: 240ns/step
  - Max 38 I/O points
  - Program capacity: 4Ksteps
- Standard type
  - CPU processing speed: 94ns/step
  - Max. 284 I/O points
  - Program capacity: 15Ksteps/200KB(XBC/XEC)
- High performance type
  - CPU processing speed: 83ns/step
  - Max. 384 I/O points
  - Program capacity: 15Ksteps/200KB(XBC/XEC)



XBC/XEC standard type



XBC/XEC high performance type

Option I/O

XBO-M1KB	Memory	XBO-AD02A	Voltage/Current, Input 2 CHs
XBO-RTCA	RTC(Real Time Clock), Battery	XBO-DA02A	Voltage/Current, Output 2 CHs
XBO-DC04A	DC 24V, Input 4 points	XBO-AH02A	Voltage/Current, Input 1 CH
XBO-TN04A	Transistor(Sink), Output 4 points		Voltage/Current, Output 1 CH
XBO-RD02A	RTD(Resistance Temperature Detect), Input 2 CHs	XBO-TC02A	TC(Thermocouple), Input 2 CHs

* Some products are due in market soon.
* XBO-DC04A and XBO-TN04A are required to use High speed Positioning functions, respectively. (Positioning function is available in standard type only)

XGT Panel Human Machine Interface

Touch panel (XP30/XP50/XP70/XP80/XP90)

- High and vivid distinction with 65,536 colors
- 10/100BASE-T Ethernet interface
- Convenient and easy screen editing
- Strengthened data management (Logging, Recipe, and Alarm).
- Multi-lingual display: up to 8 languages
- Offline and concurrent simulation with XG5000
- USB host for peripheral devices: USB drive, Mouse, keyboard, printer, etc
- Sufficient memory for screen data: 10MB

XP30/XP50/XP70/XP80/XP90

Text type (XP10)

- Screen: 192×64 Graphic STN LCD
- Flash memory: Promgram/Parameter back up
- RS-232C/RS-485 2 CH separate to use
- Power requirements-24V input or 5V direct input by LS PLC
- Various function key-ESC ALM SET ENT F1~F4 Arrow keys

XP10

Smart I/O Distributed system

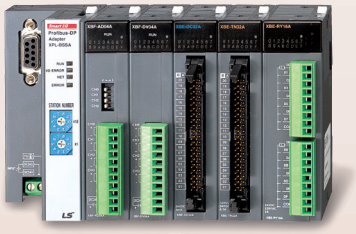
Stand alone type

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

Stand alone type

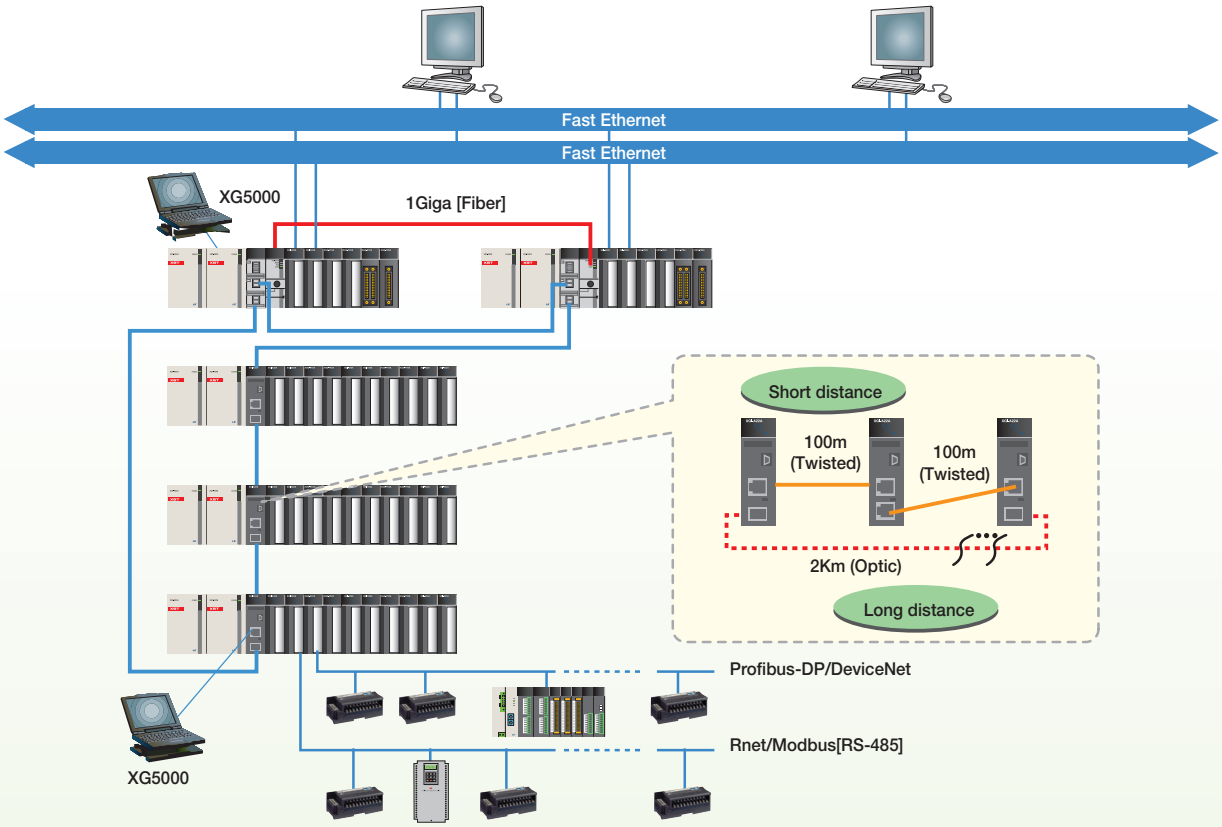
Expandable type

- 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/IP, EtherNet/IP



Expandable type

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 fair 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 analyze 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

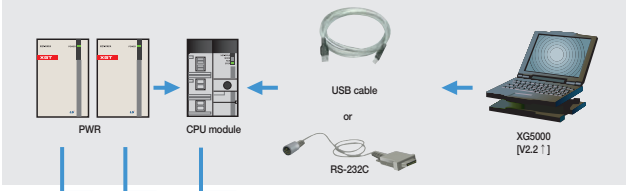
IEC 61131-3 Standard language
- LD, ST, SFC, IL (read only)
- Program configuration and data type based on IEC

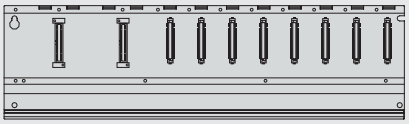
Variety of communication function
- Easy interface using Open network
  (Ethernet, Profibus-DP, DeviceNet, RS-232C, RS-422/485, etc)
- Max. 24 communication module installation on the expansion base
  (High speed link 12, P2P 8)
- Network diagnosis via network and frame monitoring
- PLC link via dedicated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

Variety of input and output module
- 8 / 16 / 32 / 64 points (8 / 16 points Relay output)
- Input / Output / Mixed module

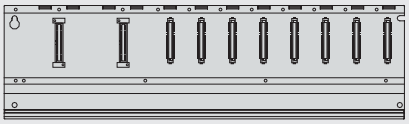
Enhanced analog function
- Enable to install the analog module on the expansion base
  (Max. 250, Analog input 139)
- Insulated type and Temperature module
- Easy to set the parameter via I/O parameter and flag
- Debugging function via special module monitoring

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-PM: Software package for positioning module





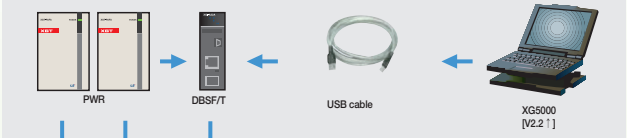
Main base [A Side] XGR-M06P

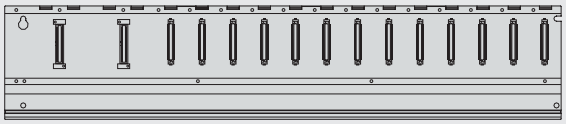


Main base [B Side] XGR-M06P

Main base

- 2 types of CPU: Fiber optic, Twisted fair
- Power: AC110V, AC220V
- 6slot base: enable to install 6 communication modules





Expansion base XGR-E12P

Expansion base

- Power: 8.5A/AC110V, 8.5A/AC220V
- Expansion drive: Fiber optic, Twisted fair, Hybrid
- EFM* and EIM*: not available with 12slot base

CPU module	
Type	I/O point
XGR-CPUH/T [Twisted fair]	131,072 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	110V 5.5A (Main base)
XGR-AC13	110V 8.5A (Expansion base)
XGR-AC22	220V 5.5A (Main base)
XGR-AC23	220V 8.5A (Expansion base)

CPU module	
Type	I/O point
XGI-CPUU/XGI-CPUH	6,144 (IEC type)
XGK-CPUU/CPUH	6,144
XGK-CPUA	3,072
XGK-CPUS	3,072
XGK-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-D21A
16 points	XGI-A12A	-	XGI-D22A
	-	-	XGI-D22B
32 points	-	-	XGI-D24A
	-	-	XGI-D24B
64 points	-	-	XGI-D28A
	-	-	XGI-D28B

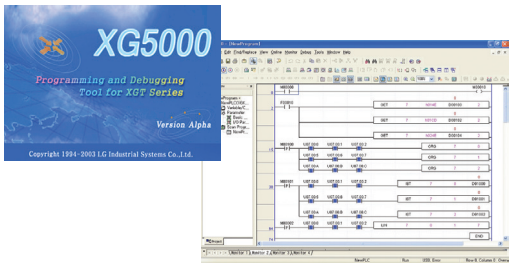
Item	Output module		
	Relay	Triac	Transistor
8 points	XGQ-RY1A	-	-
16 points	XGQ-RY2A	XGQ-SS2A	XGQ-TR2A
	XGQ-RY2B	-	XGQ-TR2B
32 points	-	-	XGQ-TR4A
	-	-	XGQ-TR4B
64 points	-	-	XGQ-TR8A
	-	-	XGQ-TR8B

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-PO1A~PO3A	Open collector, 1~3axis
	XGF-PD1A~PD3A	Line drive, 1~3axis
	XGF-PO1H~PO4H	Open collector, 1~4axis
	XGF-PD1H~PD4H	Line drive, 1~4axis
Positioning (Network type)	XGF-PN8A	LSIS EtherCAT Network, 8axis
	XGF-PN8B	Standard EtherCAT Network, 8axis
Temperature control	XGF-TC4S	Thermocouple input, 4Ch
	XGF-RD4A	RTD input, 4Ch
	XGF-RD4S	RTD input, 4Ch (Insulated)
Temperature controller	XGF-TC4UD	Temperature controller, 4 loops,
		Universal input
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
	XOL-EIMT	RAPIEnet Twisted fair 2Ch For PC
	XOL-EIMF	RAPIEnet Fiber optic 2Ch For PC
Cnet	XGL-CH2A	RS-232C/RS-422
	XGL-C22A	RS-232C, 2Ch
	XGL-C42A	RS-422, 2Ch
Ethernet (Open)	XGL-EFMF	Fiber optic, Master, SC type
	XGL-EFMT	Twisted pair, Master, RJ-45
	XGL-ESHF	Fast Ethernet, Industrial Ring module
	XGL-EHST	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-PMEC	Profibus-DP, Master
	XGL-PSRA	Profibus-DP, Slave, Remote Interface
	XGL-PSEA	Profibus-DP, Slave I/F system(I/O slot)
Fnet	XGL-FMEA	Dedicated network

XGK/ XGI Series | High performance PLC



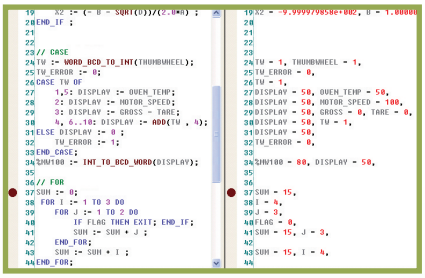
XGK series

- Fastest CPU processing.of 28ns/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 prog. up/download & monitoring

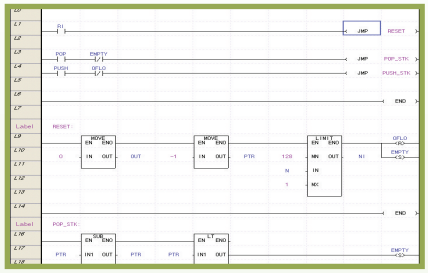
XGI series

- Fastest CPU processing.of 28ns/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 prog. up/download & monitoring

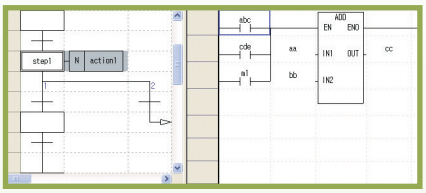
ST



LD



SFC



CPU modules

XGK-CPUU (XGI-CPUU)
- 128Ksteps(1Mbytes) program memory
- 28ns processing speed
- 6,144 I/O points control

XGK-CPUH (XGI-CPUH)
- 64Ksteps(512Kbytes) program memory
- 28ns processing speed
- 6,144 I/O points control

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

XGK-CPUS (XGI-CPUS)
- 32Ksteps(128Kbytes) program memory
- 84ns processing speed
- 3,072 I/O points control

XGK-CPUE
- 16Ksteps 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 axis positioning for servo, step drive and motor

Network modules

FEnet modules
Ethernet network with TCP/IP protocol

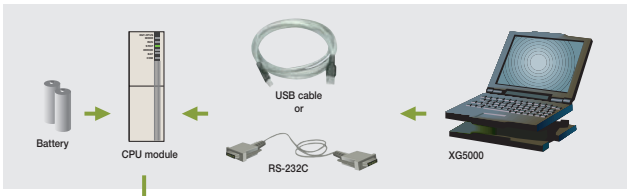
Pnet modules
Profibus-DP fieldbus protocol for connection between LS PLC and different manufacturers

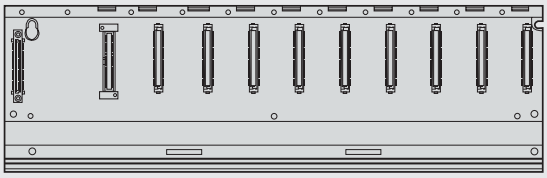
Dnet modules
DeviceNet fieldbus protocol for connection between LS PLC and different manufacturers

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

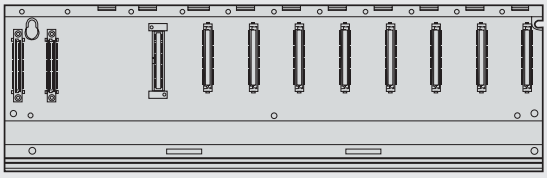




Main Base (XGB-M□□A)

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-□□□□)

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

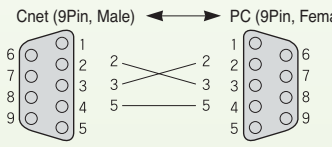
Item	Output module		
	Relay	Triac	Transistor
8 points	XGQ-RY1A	-	-
16 points	XGQ-RY2A	XGQ-SS2A	XGQ-TR2A
	XGQ-RY2B	-	XGQ-TR2B
32 points	-	-	XGQ-TR4A
	-	-	XGQ-TR4B
64 points	-	-	XGQ-TR8A
	-	-	XGQ-TR8B

Item	Output 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-PO1A~PO3A	Open collector, 1~3axis
	XGF-PD1A~PD3A	Line drive, 1~3axis
	XGF-PO1H~PO4H	Open collector, 1~4axis
	XGF-PD1H~PD4H	Line drive, 1~4axis
Positioning (Network Type)	XGF-PN8A	LS Standard EtherCAT Net. 8axis
	XGF-PN8B	Standard EtherCAT Net. 8axis
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
	XOL-EIMT	RAPIEnet Twisted fair 2Ch For PC
	XOL-EIMF	RAPIEnet Fiber optic 2Ch For PC
Cnet	XGL-CH2A	RS-232C/RS-422
	XGL-C22A	RS-232C, 2Ch
	XGL-C42A	RS-422, 2Ch
Ethernet (Open)	XGL-EFMF	Fiber optic, Master, SC type
	XGL-EFMT	Twisted pair, Master, RJ-45
	XGL-ESHF	Fast Ethernet, Industrial Ring module
	XGL-EHST	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	
	XGL-PMEC	Profibus-DP, Master
	XGL-PSRA	Profibus-DP, Slave, Remote Inter face
	XGL-PSEA	Profibus-DP, Slave
Fnet	XGL-FMEA	Dedicated network

• **XG5000 Cable (RS-232C)**



CPU module		I/O point
XGK	XGK-CPUU,CPUH	6,144
	XGK-CPUA,CPUS	3,072
	XGK-CPUE	1,536
XGI	XGI-CPUU/D, CPUU, CPU	6,144
	HXGI-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-D21A
16 points	XGI-A12A	-	XGI-D22A
	-	-	XGI-D22B
32 points	-	-	XGI-D24A
	-	-	XGI-D24B
64 points	-	-	XGI-D28A
	-	-	XGI-D28B

XGB Series | Micro PLC

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

Its compactness ensures that it occupied 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.

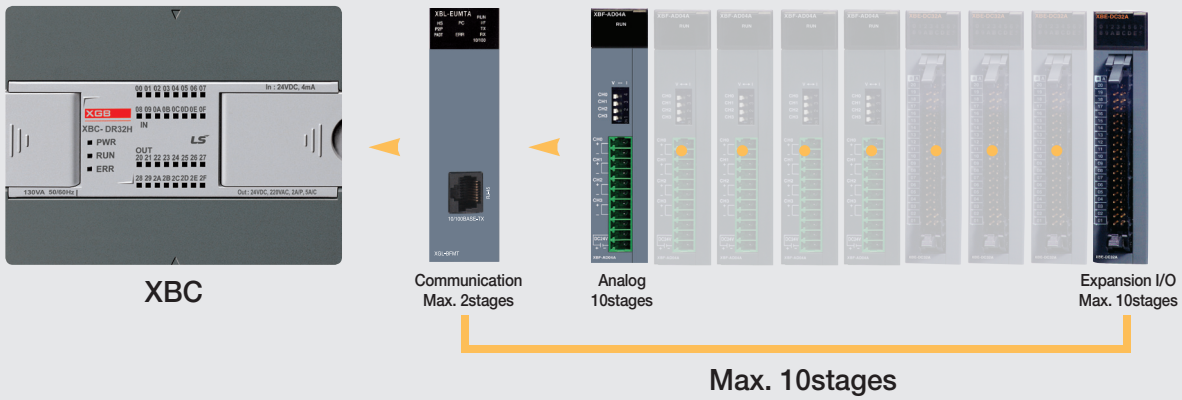
XBM

XBC

Features

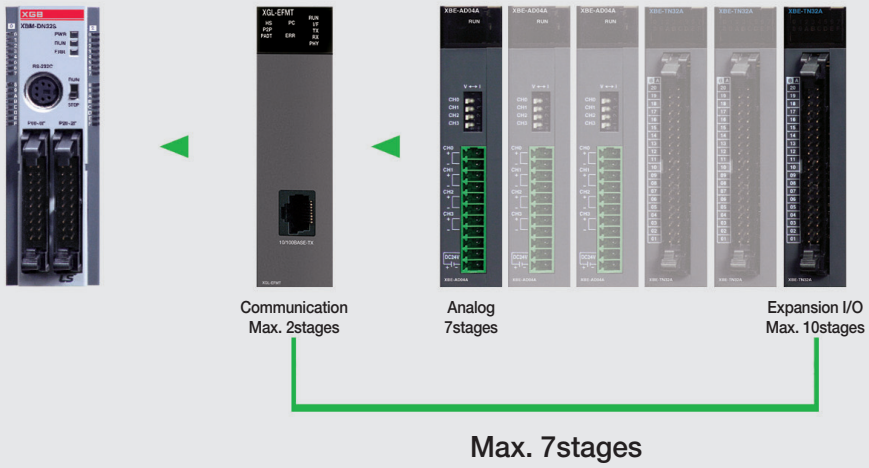
XBC/XEC (H-Type)

- 83ns/Step processing speed and floating-point arithmetic with on-board CPU
- Max 10 expansion modules, Max. 384 I/O point control: PLC systems for Small- and medium-scale applications
- Max. 5-Ch Communication with built-in functions and expansion modules



XBM (S-Type)

- 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-Ch Communication with built-in functions and expansion modules



Product list

Item	Model	Specification
Block type unit (Economic type)	XBC/XEC-DR10E	AC 100 ~ 240V, 6 points DC input, 4 point Relay ouput
	XBC/XEC-DR14E	AC 100 ~ 240V, 6 points DC input, 4 point Relay ouput
	XBC/XEC-DR20E	AC 100 ~ 240V, 12 points DC input, 8 point Relay ouput
	XBC/XEC-DR30E	AC 100 ~ 240V, 18 points DC input, 12 point Relay ouput
	XBC/XEC-DN10E	AC 100 ~ 240V, 6 points DC input, 4 point transistor output(Sink)
	XBC/XEC-DN14E	AC 100 ~ 240V, 8 points DC input, 6 point transistor output(Sink)
	XBC/XEC-DN20E	AC 100 ~ 240V, 12 points DC input, 8 point transistor output(Sink)
	XBC/XEC-DN30E	AC 100 ~ 240V, 18 points DC input, 12 point transistor output(Sink)
	XBC/XEC-DP10E	AC 100 ~ 240V, 6 points DC input, 4 point transistor output(Source)
	XBC/XEC-DP14E	AC 100 ~ 240V, 8 points DC input, 6 point transistor output(Source)
	XBC/XEC-DP20E	AC 100 ~ 240V, 12 points DC input, 8 point transistor output(Source)
	XBC/XEC-DP30E	AC 100 ~ 240V, 18 points DC input, 12 point transistor output(Source)
Block type unit (Standard type)	XBC/XEC-DR20SU	AC100~240V, 12-point DC input, 8-point Relay output
	XBC/XEC-DN20S(U)	AC100~240V, 12-point DC input, 8-point TR output
	XBC/XEC-DR30SU	AC100~240V, 18-point DC input, 12-point Relay output
	XBC/XEC-DN30S(U)	AC100~240V, 18-point DC input, 12-point TR output
	XBC/XEC-DR40SU	AC100~240V, 24-point DC input, 16-point Relay output
	XBC/XEC-DN40SU	AC100~240V, 24-point DC input, 16-point TR output
	XBC/XEC-DR60SU	AC100~240V, 36-point DC input, 24-point Relay output
	XBC/XEC-DN60SU	AC100~240V, 36-point DC input, 24-point TR output
Block type unit (High performance type)	XBC-DR32H	AC100~240V, 16-point DC input, 16-point Relay output
	XBC-DN32H	AC110~220V, 16-point DC input, 16-point TR output
	XBC-DR64H	AC100~240V, 32-point DC input, 32-point Relay output
	XBC-DN64H	AC110~220V, 32-point DC input, 32-point TR output
	XBC-DR32H/DC	DC24V, 16-point DC input, 16-point Relay output
	XBC-DN32H/DC	DC24V, 16-point DC input, 16-point TR output
	XBC DR64H/DC	DC24V 32 point DC input 32 point XBC-DC24V, 32-input, 32-Relay output
	XBC-DN64H/DC	DC24V, 32-point DC input, 32-point TR output
	XEC-DR32H/D1	AC100~240V, DC12/24V 16-point DC input, 16-point Relay output
	XEC-DN32H	AC110~220V, 16-point DC input, 16-point TR output
	XEC-DR64H/D1	AC100~240V, DC12/24V 32-point DC input, 32-point Relay output
	XEC-DN64H	AC110~220V, 32-point DC input, 32-point TR output
Modular type unit	XBM-DR16S	DC24V, 8-point DC24V input, 8-point relay output
	XBM-DN16S	DC24V, 8-point DC24V input, 8-point TR output
	XBM-DN32S	DC24V, 16-point DC24V input, 16-point TR output
Expansion I/O module	XBE-DC08A	8-point DC24V input
	XBE-DC16A	16-point DC24V input
	XBE-DC32A	32-point DC24V input
	XBE-RY08A	8-point relay output
	XBE-RY16A	16-point relay output
	XBE-TN08A	8-point Transistor (sink) output
	XBE-TN16A	16-point Transistor (sink) output
	XBE-TN32A	32-point Transistor (sink) output
	XBE-TP08A	8-point Transistor (source) output
	XBE-TP16A	16-point Transistor (source) output
	XBE-TP32A	32-point Transistor (source) output
	XBE-DR16A	8-point DC24V input, 8-point relay output
Special module	XBF-AD04A/AD08A	4-channel, 8-channel analog input(Current/Voltage)
	XBF-AD04C	4-channel analog input(current/voltage, resolution : 1/16000)
	XBF-AH04A	2-channel analog input (current/voltage)/2-channel analog output (current/voltage)
	XBF-DV04A	4-channel analog output (voltage)
	XBF-DV04C	4-channel analog input(voltage, resolution : 1/16000)
	XBF-DC04A	4-channel analog output (current)
	XBF-DC04C	4-channel analog input(current, resolution : 1/16000)
	XBF-RD04A	4-channel RTD input
	XBF-TC04S	4-channel Thermocouple input
	XBF-PD2A	Line drive 2axis
	XBF-HO02A/HD02A	2-channel High-speed counter input(Open collector/Line dirve)
Communication module	XBL-C41A	Cnet (RS-422/485), 1Ch
	XBL-C21A	Cnet (RS-232C), 1Ch
	XBL-EMTA	Fast Ethernet (100Mbps), 1Ch
	XBL-EIMT	RAPIEnet, 2Ch
	XBL-EIMF/EIMH	RAPIEnet I/F, Max 2km(Fiber 2Ch/Twisted pair 1Ch, Fiber 2Ch.), 100Mbps
	XBL-EIPT	Ethernet/IP, 2Ch
	XBL-CMEA/CSEA	CANopen Master/Slave(1000Kbps, Num of PDO : 32/64)
Loader Cable	PMC-310S	Connection cable (PC to PLC), 9pin(PC)-6pin(PLC)
	USB-301A	Connection cable (PC to PLC), USB
Memory module	XBO-M1024A	External memory for program back-up (1024Kbyte)
Option modules	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-M2MB	Memory
	XBO-RTCA	RTC (Real time clock), Battery
	XBO-DC04A	DC24V, Input 4 points
	XBO-TN04A	TR (Sink), Output 4 points
	XBO-RD01A	RTD (Resistance temperature detect), Input 1Ch

Terminal board	Connection cable	XBM-DN16S XBM-DN32S	XBE-DC32A	XBE-TN32A	XBE-TP32A	Cable length
TG7-1H40S (Terminalboard)	R40H/20HH-05S-XBM3	●	-	-	-	0.5m
	R40H/20HH-10S-XBM3	●	-	-	-	1.0m
TG7-1H40CA (TerminalBoard, 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 (Relayboard: 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 (Relayboard:Source)	C40HH-05PH-XBP	-	-	-	●	0.5m
	C40HH-15PH-XBP	-	-	-	●	1.5m
	C40HH-20PH-XBP	-	-	-	●	2.0m

GM7U

Features

Global standard (IEC61131-3) language: IL, ID, SFC

Various main module: 32 types
- 20/30/40/60 points
- AC/DC power, DC input, Relay/Transistor output

Various expansion module: 24 types
- Digital I/O 7 types, analog I/O 9 types, Communication I/F 6 types, option module 2 types

Total I/O control: 120 points

Program memory capacity:
132Kbtye (including parameters)

High speed processing
- 0.1 ~ 0.9 μs/Basic instruction

Batteryless Backup
- Program backup: EEPROM
- Data backup: Supercapacitor

Communication Channel: 3 channels
- Loader: 1 CH, Built-in RS-485: 1 CH
  Built-in RS-232C or communication I/F: 1 CH
- Various mode: Dedicated/User-defined/
  MODBUS/No protocol/LS Inverter mode

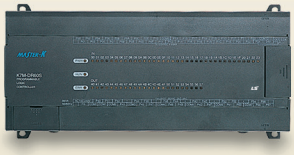
Built-in functions
- High speed counter function (32 bits)
  - 1 phase: 100 kHz 2 CH, 20 kHz 2 CH (4 CH in total)
  - 2 phase: 50 kHz 1 CH, 10 kHz 1 CH (2 CH in total)
- Positioning function: DRT type only
  - Control axis: 2 axes (100 kHz)
  - Position/speed/synchronous operation
- Improved PID control function
  - Relay and PRC auto-tuning
  - Forward/Reverse
  - PWM output, delta MV
  - Positioning/Velocity algorithm
- Pulse catch, external Interrupt: 10 μs 2 points, 50 μs 6 points
- Input filter: 0~1000 ms

* Expansion modules for GM7U and K120S are common.


G7M-DR20U


G7M-DR30U


G7M-DR40U


G7M-DR60U


G7L-CUEC


G7E-RY08A

Features

Item		GM4-CPUA/B	GM4-CPUC	GM6	GM7U
Control method		Cyclic execution of stored program, Interrupt task execution			
I/O Updating method		Program refresh per 1 scan			
Program languages		IL (Instruction list)/LD (Ladder diagram)/SFC (Sequential function chart)			
Number of instructions	Operator	IL: 20, LD: 13			
	Standard function	194	194 +'real number F'	194	
	Special function block	Special function blocks for special modules			
Configuration speed	Operator	0.2 μs/step	0.12 μs/step	0.5 μs/step	0.1 μs/step
	Standard function / Standard function block	0.2 μs/step	0.12 μs/step	0.5 μs/step	
Program capacity		128 K	1 M	68 K	132 K
I/O points	Using 32pt module	1,024	1,792	384	20~120
	Using 64pt module	2,048	3,584	-	-
	Network	4,096/8,192	32,768	-	-

GLOFA-GM6

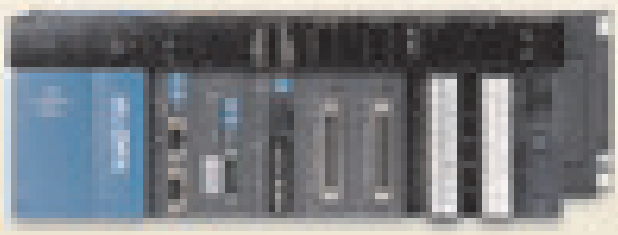
Features

- High performance features with compact size
- High-speed processing using dedicated CPU
- Designed by international standard language
- Designed by international standard language (IEC61131-3): IL, LD, SFC
- Max. I/O points: 384 points

GLOFA-GM4

Features

- Max. I/O points: GM4A/B (2,048), GM4C (3,584)
- Fast processing time with high-speed gate array
- Fit for small-and medium-sized manufacturing line network
- In case of remote system configuration, large-scale control available
- Cnet, DeviceNet, Fast Ethernet, Fnet, Profibus-DP, Rnet support
- Downsizing and high performance/function
- Special function modules
  - Analog I/O, PID, High-speed counter, Position control (APM), AT, TC, RTD, etc



K120S

Features

20/30/40/60-point standard main unit
10/14/20/30-point economic main unit

- All the standard DRT-unit have transistor output for position control (except 10-point unit)
- Max. 120 points are available connecting 3 expansion units

High speed processing

- Basic command: 0.1 ~ 0.9 ㎲/step,
  Application command: A few to several tens of ㎲/step

Batteryless backup

- Program backup: EEPROM backup while online editing
- Data backup: supercapacitor
  (over 2000 hours at normal temperature)

MASTER-K 120S

Various input handling

- Input filter: filter time can be set from 0 to 1000 ms as the unit of 8 points
- Pulse catch: 10 ㎲ (P0, P1), 50 ㎲ (P2 ~ P7)
- External interrupt: 10 ㎲ (P0, P1), 50 ㎲ (P2 ~ P7)

High speed counter: 32-bit signed counter

- 1 phase: 100 kHz 2 CH, 20 kHz 2 CH (4 CH in total)
- 2 phase: 50 kHz 1 CH, 10 kHz 1 CH (2 CH in total)
- Additional functions: preset function, latch counter, comparison output, RPM function

Positioning function

- Control axis: 2 axes (100 kHz)
- Operation mode: Single, repeated, end, keep, continuous
- Additional function: Return to origin, JOG operation, PWM output

Communication function

- Supports two built-in communication ports
  RS-232C and RS-485
- Supports 'No Protocol Mode' and communication monitoring

PID control function

- Relay and PRC auto-tuning
- PWM Output, anti-derivative kick, anti-windup, Positioning/Velocity algorithm to assign

Item	Model	Specification
Digital I/O	G7E-DR(08/10/20)A	G7E-DR08A: slim DC 24 V input 4/relay output 4, G7E-DR10A: DC 24 V input 6 pts/relay output 4 pts, G7E-DR20A: input 12 pts/relay output 8 pts
	G7E-TR10A	TR output 10 pts
Analog	G7E-DC08(RY08)A	G7E-DC08A: slim type (DC 24 V input 8 pts), G7E-RY08A: slim type (relay output 8 pts)
	G7F-ADHA(B)	G7F-ADHA: (AD: 2 CHs/DA: 1 CH), G7F-ADHB: slim type (AD: 2 CHs/DA: 2 CHs)
	G7F-AD2A(B)	G7F-AD2A: (AD: 4 CHs), G7F-AD2B: slim type (AD: 4 CHs)
	G7F-DA2I	G7F-DA2I: (DA: 4 CHs (current output))/G7F-DA2V: slim (DA: 4 CHs (voltage output))
	G7F-AT2A	4 points (0~200), analog timer
	G7F-RD2A	4 CHs, slim type, RTD module
Cnet interface	G7L-CUEB(C)	G7L-CUEB: RS232C 1 CH, G7L-CUEC: RS422 1 CH (Modbus protocol included)
DeviceNet interface	G7L-DBEA	DeviceNet slave interface module
Profibus-DP interface	G7L-PBEA	Profibus-DP slave interface module
Fieldbus interface	G7L-FUEA	Fieldbus interface module: LSIS dedicated protocol
	G7L-RUEA	Fieldbus interface module: LSIS SMART I/O dedicated protocol
RTC module	G7E-RTCA	RTC module
Memory module	G7M-M256B	Memory module (256 K)

Features

Item		K120S		K200S	K300S
		Economic	Standard		
Operation method		Cyclic execution of stored program			
I/O control method		Scan synchronized batch processing method (Refresh method)			
Program language		Mnemonic, Ladder			
Number of instructions	Basic	30			
	Application	269	277	218	218
Max. I/O control points		70	120	384 (512)	1,024
Program memory capacity		2 K	10 K	7 K	15 K
Processing speed (μs/Step)		0.4	0.1	0.5	0.2

MASTER-K200S

Features

- Small-and medium-scale control with 384 points
- High-speed processing: 0.5μs/step
- On-line editing
- Change I/O value by force
- Small-and medium-sized manufacture line control by network
- Various special modules: analog, HSC, positioning, etc
- Built-in flash memory
- 3 types of CPU
- System monitoring function
- Trigger function
- Network support: Cnet, Fast Ethernet, Fnet, Rnet, DeviceNet, and Profibus-DP

MASTER-K300S

Features

- Small-and medium-scale control with 1,024 points
- High-speed processing: 0.2μs/step
- On-line editing
- Change I/O value by force
- Small-and medium-sized manufacture line control by network
- Downsizing and high performance
- Various special modules: analog, HSC, positioning, etc
- Network support: Cnet, Fast Ethernet, Fnet, Rnet, DeviceNet, Profibus-DP (Max. 4 modules in total)

GM7U main unit

Type	Part Number	Specification	Power supply	Remarks
GM7U main	G7M-DR30U (/DC)	DC 24V Input 18 points, Relay output 12 points	AC 100~240V (DC 24V)	
	G7M-DR40U (/DC)	DC 24V Input 24 points, Relay output 16 points		
	G7M-DR60U (/DC)	DC 24V Input 36 points, Relay output 24 points		
	G7M-DRT20U (/DC)	DC 24V Input 12 points, Tr. output 4 points/Relay output 4 points		
	G7M-DRT30U (/DC)	DC 24V Input 18 points, Tr. output 4 points/Relay output 8 points		
	G7M-DRT40U (/DC)	DC 24V Input 24 points, Tr. output 4 points/Relay output 12 points		
	G7M-DRT60U (/DC)	DC 24V Input 36 points, Tr. output 4 points/Relay output 20 points		
	G7M-DT20U (N) (/DC)	DC 24V Input 12 points, NPN Tr. output 8 points		
	G7M-DT30U (N) (/DC)	DC 24V Input 18 points, NPN Tr. output 12 points		
	G7M-DT40U (N) (/DC)	DC 24V Input 24 points, NPN Tr. output 16 points		
	G7M-DT60U (N) (/DC)	DC 24V Input 36 points, NPN Tr. output 24 points		
	G7M-DT20U (P) (/DC)	DC 24V Input 12 points, PNP Tr. output 8 points		
	G7M-DT30U (P) (/DC)	DC 24V Input 18 points, PNP Tr. output 12 points		
	G7M-DT40U (P) (/DC)	DC 24V Input 24 points, PNP Tr. output 16 points		
	G7M-DT60U (P) (/DC)	DC 24V Input 36 points, PNP Tr. output 24 points		

K120S main unit

Type	Part Number	Specification	Power supply	Remarks
K120S economic	K7M-DR10UE (/DC)	DC 24V Input 6 points, Relay output 4 points	AC 100~240V (DC 24V)	
	K7M-DR14UE (/DC)	DC 24V Input 8 points, Relay output 6 points		
	K7M-DR20UE (/DC)	DC 24V Input 12 points, Relay output 8 points		
	K7M-DR30UE (/DC)	DC 24V Input 18 points, Relay output 12 points		
K120S standard	K7M-DR20U (/DC)	DC 24V Input 12 points, Relay output 8 points		
	K7M-DR30U (/DC)	DC 24V Input 18 points, Relay output 12 points		
	K7M-DR40U (/DC)	DC 24V Input 24 points, Relay output 16 points		
	K7M-DR60U (/DC)	DC 24V Input 36 points, Relay output 24 points		
	K7M-DRT20U (/DC)	DC 24V Input 12 points, Tr. output 4 points/Relay output 4 points		
	K7M-DRT30U (/DC)	DC 24V Input 18 points, Tr. output 4 points/Relay output 8 points		
	K7M-DRT40U (/DC)	DC 24V Input 24 points, Tr. output 4 points/Relay output 12 points		
	K7M-DRT60U (/DC)	DC 24V Input 36 points, Tr. output 4 points/Relay output 20 points		
	K7M-DT20U (/DC)	DC 24V Input 12 points, Tr. output 8 points		
	K7M-DT30U (/DC)	DC 24V Input 18 points, Tr. output 12 points		
	K7M-DT40U (/DC)	DC 24V Input 24 points, Tr. output 16 points		
	K7M-DT60U (/DC)	DC 24V Input 36 points, Tr. output 24 points		

GM7U expansion modules

Type		Part Number	Specification	Power supply	Remarks
Expansion module	Digital I/O	G7E-DR08A	DC 24V Input 4 points, Relay output 4 points	From main module	
		G7E-DR10A	DC 24V Input 6 points, Relay output 4 points		GM7
		G7E-DR20A	DC 24V Input 12 points, Relay output 8 points		
	Input	G7E-DC08A	DC 24V Input 8 points		
	Output	G7E-RY08A	Relay output 8 points		
		G7E-RY16A	Relay output 16 point		
		G7E-TR10A	Tr. output 10 points		
Special module	Analog I/O	G7F-ADHA	Analog input 2Chs, Analog output 1Ch	DC 24V from external power supply	GM7
		G7F-ADHB	Analog input 2Chs, Analog output 2Chs		
		G7F-ADHC	Analog input 2Chs, Analog output 1Ch		
	Analog Input	G7F-AD2A	Analog input 4Chs		GM7
		G7F-AD2B	Analog input 4Chs		
	Analog Output	G7F-DA2I	Analog current output 4Chs		
		G7F-DA2V	Analog voltage output 4Chs		
	RTD Input	G7F-RD2A	RTD input 4Chs		
	Analog Timer	G7F-AT2A	Analog timer 4Chs	From main module	GM7
Comm. module	Cnet I/F	G7L-CUEB	RS-232C 1Ch		
		G7L-CUEC	RS-422 1Ch		
	Fnet I/F	G7L-FUEA	Fnet (dedicated protocol) I/F master		
	Rnet I/F	G7L-RUEA	Rnet (dedicated protocol for SMART I/Os) I/F master		
	Pnet I/F	G7L-PBEA	Profibus-DP slave unit		
	Dnet I/F	G7L-DBEA	DeviceNet slave unit		
Option	RTC pack	G7E-RTCA	RTC unit		
	Memory pack	G7M-M256	Memory pack for GM7		GM7 only
		G7M-M256B	Memory pack for GM7U		GM7U only

* If a part number ends with /DC, the supply power is DC24V.
* Slim type: G7E-DC08A, G7E-DR08A, G7E-RY8A, G7F-ADHB, G7F-AD2B, G7F-RD2A

K120S expansion modules

Type		Part Number	Specification	Power supply	Remarks
Expansion module	Digital I/O	G7E-DR08A	DC 24V Input 4 points, Relay output 4 points	From main module	K120S only
		G7E-DR10A	DC 24V Input 6 points, Relay output 4 points		
		G7E-DR20A	DC 24V Input 12 points, Relay output 8 points		K80S CPU V1.7 ↑
	Input	G7E-DC08A	DC 24V Input 8 points		K120S only
	Output	G7E-RY08A	Relay output 8 points		
		G7E-RY16A	Relay output 16 point		
		G7E-TR10A	Tr. output 10 points		K80S CPU V1.7 ↑
Special module	Analog I/O	G7F-ADHA	Analog input 2Chs, Analog output 1Ch	DC 24V from external power supply	
		G7F-ADHB	Analog input 2Chs, Analog output 2Chs		K120S only
		G7F-ADHC	Analog input 2Chs, Analog output 1Ch		
	Analog Input	G7F-AD2A	Analog input 4Chs		
		G7F-AD2B	Analog input 4Chs		
	Analog Output	G7F-DA2I	Analog current output 4Chs		
		G7F-DA2V	Analog voltage output 4Chs		K120S only
	RTD Input	G7F-RD2A	RTD input 4Chs		
	Analog Timer	G7F-AT2A	Analog timer 4Chs	From main module	
Comm. module	Cnet I/F	G7L-CUEB	RS-232C 1Ch		
		G7L-CUEC	RS-422 1Ch		
	Fnet I/F	G7L-FUEA	Fnet (dedicated protocol) I/F master		
	Rnet I/F	G7L-RUEA	Rnet (dedicated protocol for SMART I/Os) I/F master		
	Pnet I/F	G7L-PBEA	Profibus-DP slave unit		
	Dnet I/F	G7L-DBEA	DeviceNet slave unit		
Option	RTC pack	G7E-RTCA	RTC unit		
	Memory pack	G7M-M256	Memory pack for K80S		K80S only
		G7M-M256B	Memory pack for K120S		K120S only

* If a part number ends with /DC, the supply power is DC24V.
* Slim type: G7E-DC08A, G7E-DR08A, G7E-RY8A, G7F-ADHB, G7F-AD2B, G7F-RD2A

GM6/K200S

Type		Part Number	Specification	Remarks
CPU		GM6-CPUA	Max. I/O: 384 points, Program memory: 68K, Built-in function: RS-232	
		GM6-CPUB	Max. I/O: 384 points, Program memory: 68K, Built-in function: RS-422, PID, RTC	
		GM6-CPUC	Max. I/O: 384 points, Program memory: 68K, Built-in function: RS-232C, PID, RTC, HSC (50kpps)	
		K3P-07AS	Max. I/O: 384 points, Program memory: 7K, Built-in function: RS-232	Program memory: 7k steps
		K3P-07BS	Max. I/O: 384 points, Program memory: 7K, Built-in function: RS-422, PID, RTC	
		K3P-07CS	Max. I/O: 384 points, Program memory: 7K, Built-in function: RS-232C, PID, RTC, HSC (50kpps)	
Power module		GM6-PAFA	AC input (Free), output: DC 5V 2A, DC 24V 0.3A	
		GM6-PAFB	AC input (Free), output: DC 5V 2A, DC 15V 0.5A, DC -15V 0.2A, when analog module used Analog	
		GM6-PAFC	AC input (Free), output: DC 5V 3.5A, DC 24V 0.3A for 12-slot base board	
		GM6-PA2A	AC 220V Only, output: DC 5V 6A	
		GM6-PDFA	DC 12/24V input, output: DC 5V 2A	
		GM6-PDFB	DC 12/24V input, output: DC 5V 3A, DC 15V 0.5A, DC -15V 0.2A, when analog module used	Analog
Base		GM6-B04M	4-slot base board	Not expansible
		GM6-B06M	6-slot base board	
		GM6-B08M	8-slot base board	
		GM6-B12M	12-slot base board, Comm I/F module installation: slot 0~7	
DC input module		G6I-D21A	DC 12/24V input 8 points, Current Sink/Source type	
		G6I-D22A	DC 12/24V input 16 points, Current Sink/Source type	
		G6I-D22B	DC 24V input 16 points, Current Source type	
		G6I-D24A	DC 12/24V input 32 points, Current Sink/Source type	
		G6I-D24B	DC 24V input 32 points, Current Source type	
AC input module		G6I-A11A	AC 110V input 8 points	
		G6I-A21A	AC 220V input 8 points	
Relay output module		G6Q-RY1A	Relay output 8 points, DC 12/24V, AC 220V, 2A	AC, DC
		G6Q-RY2A	Relay output 16 points, DC 12/24V, AC 220V, 2A	
		G6Q-RY2B	Relay output 16 points, DC 12/24V, AC 220V, 2A, Surge absorber	
Transistor output module		G6Q-TR2A	Tr. (NPN) output 16 points, DC 12/24V, 0.5A	DC
		G6Q-TR2B	Tr. (PNP) output 16 points, DC 12/24V, 0.5A	
		G6Q-TR4A	Tr. (NPN) output 32 points, DC 12/24V, 0.1A	
		G6Q-TR4B	Tr. (PNP) output 32 points, DC 12/24V, 0.1A	
Triac output module		G6Q-SS1A	DC 12/24V input 8 points, AC 100~240V, 0.6A	AC
I/O hybrid module		G6H-DR2A	DC 12/24V input 8 points, Relay output 8 points	
Special module	A/D module	G6F-AD2A	V/I input: 4 CHs, DC 1~5V, 0~10V, -10~10V, 4~20mA	GM6-PAFB/PDFB
	D/A module	G6F-DA2V	V output: 4 CHs, DC -10~10V	
		G6F-DA2I	I output: 4 CHs, DC 4~20mA	
	HSC module	G6F-HSCA	1Ch, Counting range: 0~16,777,215	
		G6F-HD1C	2 CHs, 500kpps, Counting range: -2,147,483,648~2,147,483,647, Line drive type	
		G6F-HO1C	2 CHs, 200kpps, Counting range: -2,147,483,648~2,147,483,647, Open collector type	
	Positioning module	G6F-PPxO	X=1, 2, 3: axis, Pulse output, 200kpps, Open collector type	GLOFA CPU V2.0
		G6F-PPxD	X=1, 2, 3: axis, Pulse output, 1M, Line drive type	MASTER-K CPU V2.3
	Thermocouple input module	G6F-TC2A	Input: 4 CHs (Thermocouple: K, J, E, T, B, R, S)	GM6-PAFB/PDFB
Comm. module	Fast Enet I/F module (Open type)	G6L-EUTB	10/100BASE-TX, UTP	GLOFA CPU V2.1 MASTER-K CPU V2.4
		G6L-EUFB	100BASE-FX, Fiber optic	
	Fnet I/F module	G6L-FUEA	Fnet master module (Shielded twisted pair cable, 1Mbps)	
	Fnet remote I/F module	G6L-RBEA	Fnet remote module (Shielded twisted pair cable, 1Mbps)	
	Dnet I/F module	G6L-DUEA	DeviceNet master module (500kbps MAX.)	
	Pnet I/F module	G6L-PUEA	Profibus-DP master module (1K)	
		G6L-PUEB	Profibus-DP master module (7K)	
	Rnet I/F module	G6L-RUEA	Rnet master module	
	Cnet I/F module	G6L-CUEB	RS-232C	
		G6L-CUEC	RS-422/485	
Dummy module		GM6-DMMA	Dummy module for empty I/O slot	

GM4/K300S

Type		Part Number	Specification	Remarks
CPU		GM4-CPUA	Max. I/O: 2,048 points, Program memory: 128K, Data memory: 52K	
		GM4-CPUB	Max. I/O: 2,048 points, Program memory: 128K, Data memory: 50K	
		GM4-CPUC	Max. I/O: 2,048 points, Program memory: 1M, Data memory: 428K	
		K4P-15AS	Max. I/O: 1,024 points, Program memory: 15K steps	
Main base		GM4-B04M	4-slot main base board	
		GM4-B06M	6-slot main base board	
		GM4-B08M	8-slot main base board	
		GM4-B12M	12-slot main base board	Not expandable
Main base (High Functional)		GM4-B4EH	4-slot main base board (High Functional)	
		GM4-B6EH	6-slot main base board (High Functional)	
		GM4-B8EH	8-slot main base board (High Functional)	
Expansion base		GM4-B04E	4-slot expansion base board	
		GM4-B06E	6-slot expansion base board	
		GM4-B08E	8-slot expansion base board	
Expansion base (High Functional)		GM4-B4EH	4-slot expansion base board (High Functional)	
		GM4-B6EH	6-slot expansion base board (High Functional)	
		GM4-B8EH	8-slot expansion base board (High Functional)	
Expansion cable		G4C-E041	Length: 0.4m	
		G4C-E121	Length: 1.2m	
		G4C-E301	Length: 3.0m	
Expansion cable (High Functional)		G4C-E051	Length: 0.6m	
		G4C-E601	Length: 6m	
		G4C-E102	Length: 10m	
		G4C-E152	Length: 15m	
Power module		GM4-PA1A	AC 110V input, DC 5V: 4A, DC 24V: 0.7A	
		GM4-PA2A	AC 220V input, DC 5V: 4A, DC 24V: 0.7A	
		GM4-PA1B	AC 110V input, DC 5V: 3A, DC 24V: 0.5A	
		GM4-PA2B	AC 220V input, DC 5V: 3A, DC 24V: 0.5A	
		GM4-PA2C	AC 220V input, DC 5V: 8A	
		GM4-PD3A	DC 24V input, DC 5V: 4A	
DC input module		G4I-D22A	16 points DC 12/24V input (Current Sink/Source type)	
		G4I-D22B	16 points DC 12/24V input (Current Source type)	
		G4I-D22C	16 points DC 24V input (Current Sink/Source type)	
		G4I-D24A	32 points DC 12/24 input (Current Sink/Source type)	
		G4I-D24B	32 points DC 12/24 input (Current Source type)	
		G4I-D24C	32 points DC 24 input (Current Sink/Source type)	
		G4I-D28A	64 points DC 12/24 input (Current Sink/Source type)	
AC input module		G4I-A12A	16 points AC 110V input	
		G4I-A22A	16 points AC 220V input	
Relay output module		G4Q-RY2A	16 points Relay output (2A)	AC, DC
Transistor output module		G4Q-TR2A	16 points Tr. (NPN) output (0.5A) (Sink type)	DC
		G4Q-TR2B	16 points Tr. (PNP) output (0.5A) (Source type)	
		G4Q-TR4A	32 points Tr. (NPN) output (0.1A) (Sink type)	
		G4Q-TR4B	32 points Tr. (PNP) output (0.1A) (Source type)	
		G4Q-TR8A	64 points Tr. (NPN) output (0.1A) (Sink type)	
Triac output module		G4Q-SS2A	16 points Triac output (1.0A)	AC
		G4Q-SS2B	16 points Triac output (0.6A)	
I/O hybrid module		G4H-DR2A	8 points DC 12/24V input, 8 points relay output	
		G4H-DT2A	8 points DC 12/24V input, 8 points Tr. output	
Special module	A/D module	G4F-AD2A	V/I input: 4 CHs (DC -5~5V/-10~10V/DC -20~20mA)	
		G4F-AD3A	V/I input: 8 CHs (DC 1~5V/0~10V/DC 4~20mA)	
	D/A module	G4F-DA1A	V/I output: 2 CHs (DC -10~10V, DC 4~20mA)	
		G4F-DA3V	V output: 8 CHs (DC -10~10V)	
		G4F-DA3I	I output: 8 CHs (DC 4~20mA)	
		G4F-DA2V	V output: 4 CHs (DC-10~10V)	
		G4F-DA2I	I output: 4 CHs (4~20mA)	

GM4/K300S

Type		Part Number	Specification	Remarks
Special module	HSC module	G4F-HSCA	1 CH, 50kHz, Counting range: 0~16,777,215	
		G4F-HD1C	2 CHs, 500kpps, Counting range: -2,147,483,648~+2.147,483,647, Line drive type	
		G4F-HO1C	2 CHs, 200kpps, Counting range: -2,147,483,648~+2.147,483,647, Open collector type	
	Positioning module	G4F-PPxO	X=1, 2, 3: axis, Pulse output, 200kpps, Open Collector Type	CPU V3.2 ↑
		G4F-PPxD	X=1, 2, 3: axis, Pulse output, 1Mbps, Line Drive Type	
	Thermocouple input module	G4F-TC2A	Input: 4 CHs (Thermocouple: K, J, E, T, B, R, S)	
	RTD input	G4F-RD2A	Input: 4 CHs	
	PID control module	G4F-PIDB	Max. 16-loop control (Autotuning), 16-point digital output	
Comm. module	Fast Enet I/F module (Open type)	G4L-EUTB	10/100BASE-TX, UTP	GLOFA CPU V2.7 ↑ MASTER-K CPU V2.4 ↑
		G4L-EUFB	100BASE-FX, Fiber optic	
		G4L-EU5B	10BASE-5, AUI	
	Fnet I/F module	G4L-FUEA	Fnet master module (Shielded twisted pair cable), 1Mbps	
		G4L-FUOA	Fnet master module (Optic cable)	
	Fnet remote I/F module	G4L-RBEA	Fnet remote module (Shielded twisted pair cable), 1Mbps	
	Dnet I/F module	G4L-DUEA	DeviceNet master module (500kbps MAX.)	
	Pnet I/F module	G4L-PUEA	Profibus-DP master module (1Kbyte)	
		G4L-PUEB	Profibus-DP master module (7Kbyte)	
	Rnet I/F module	G4L-RUEA	Rnet master module	
	Cnet I/F module	G4L-CUEA	RS-232C/RS-422: 1Ch each, Stand alone/Interlocking mode	
	Dummy module	GM4-DMMA	Dummy module for empty I/O slot	
	Memory module	G4M-M032	Capacity: 128K (32k steps)	
	USB cable	USB-301A	Downloading cable for USB port of GM4-CPUC	GM4-CPUC

* In GM4-CPUC, you are supposed to use high-functional base (main/expansion) and high functional cable when you want to make more than 3-stage expansion.

Features

- Wiring reduction and real time control of distributed I/O
- Supporting Rnet, DeviceNet, Profibus-DP, MODBUS (RS-422/485)
- 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)		Relay	DC (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-D22A	GRL-D24A	GRL-TR2A	GRL-TR4A	GRL-RY2A	GRL-DT4A	
	Profibus-DP	GPL-D22A●	GPL-D24A●	GPL-TR2A▲	GPL-TR4A▲	GPL-RY2A●	GPL-DT4A▲	
	DeviceNet	GDL-D22A●	GDL-D24A●	GDL-TR2A▲	GDL-TR4A▲	GDL-RY2A●	GDL-DT4A▲	
	MODBUS	GSL-D22A	GSL-D24A	GSL-TR2A	GSL-TR4A	GSL-RY2A	GSL-DT4A	

Note1) Specification stated in the table is specification of type A. Refer to XGT user's manual.
● A, C ▲ A, A1, B, C, C1

A Sink, Rated current: 0.1A, terminal fixed type
A1 Sink, Rated current: 0.5A, terminal fixed type
B Source, Rated current: 0.5A, terminal fixed type
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	GPL-AC8C	Item	GPL-DV4C	GPL-DC4C
Input channels	8 channels		Output channels	4 channels	
Analog input	DC 1~5 V, 0~5 V, 0~10 V,	0~20 mA, 4~20 mA,	Digital input	0~4000, 0~8000, -8000~8000	0~8000
	-10~+10 V	- 20~20 mA	Analog output	DC 1~5 V, 0~5 V, 0~10 V,	0~20 mA, 4~20 mA
Digital output	0~4000, 0~8000, -8000~8000	0~4000, -8000~8000		-10~+10 V	
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 ℃)	±0.3% (full scale, Ta=23 ℃±5 ℃)	Accuracy	±0.3% (full scale, Ta=0~55 ℃)	±0.3% (full scale, Ta=23 ℃±5 ℃)
		±0.4% (full scale, Ta=0~55 ℃)			±0.4% (full scale, Ta=0~55 ℃)
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→MInsulation			Analog input/output terminal with FG→MInsulation	
Insulation method	Analog input/output terminal with Communication terminal→MInsulation		Insulation method	Analog input/output terminal with Communication terminal→MInsulation	
	Analog input/output terminal with each channel→MNo insulation			Analog input/output terminal with each channel→MNo 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
Weight (kg)	0.313	0.313	Weight (kg)	0.314	0.322

Communication specifications

Item	Rnet (LS dedicated network)	Profibus-DP	DeviceNet	MODBUS
Protocol	LSIS dedicated protocol (Fnet for Remote)	Profibus-DP (RS-485/EN50170)	DeviceNet (CAN)	MODBUS (RS-422/485)
Transmission speed	1 Mbps	9.6 Kbps ~ 12 Mbps	125/250/500 Kbps	2.4 Kbps ~ 38.4 Kbps
Transmission distance	750 m/segment	100 m ~ 1.2 km	500/250/125 m (Thin cable: 100 m)	500 m
Topology	Bus Token	Bus	Trunk & Drop	Bus
Transmission	Pass & Broadcast	Token Pass & Master/Slave (Poll)	CSMA/NBA (Poll, Cyclic, COS, Bit Strobe)	Master/Slave (Poll)
No. of stations	32/segment (Input: 32, Output: 32)	32/segment, 99/network	64	32
Link capacity	2,048 points/master (64 stations × 32 points)	7 Kbyte/master	2,048 points/master	64 points/station

Note1) Smart I/O supports Poll type currently, but is supposed to support Cyclic, COS and Strobe later on.

SMART I/O | Expandable type

Modbus TCP, EtherNet/IP

DeviceNet

Profibus-DP

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

DeviceNet specification

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

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

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 Slots		8
I/O Data size		64bytes (Input: 32bytes/Output: 32bytes)
Max. Analog channels		32Chs (Input: 16Chs/Output: 16Chs)
Power	Input	19.2V ~ 28.8V
	Output	5V(±20%)/1.5A
Weight		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 Slots		8				
I/O Data Size		64bytes (Input: 32bytes/Output: 32bytes)				
Max. Analog Channels		32Chs (Input: 16Chs/Output: 16Chs)				
Power	Input	19.2V ~ 28.8V				
	Output	5V(±20%)/1.5A				
Weight		100g				

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

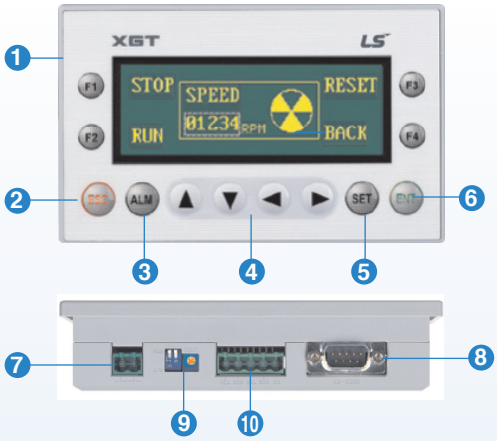
Graphic type XP30/XP50/XP70/XP80/XP90

- 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

Item			XP30-BTE/DC	XP30-BTA/DC	XP30-TTE/DC	XP30-TTA/DC	XP50-TTE/DC	XP50-TTA/DC	XP70-TTA/AC XP70-TTA/DC	XP80-TTA/AC XP80-TTA/DC	XP90-TTA/AC
			Mono		Color						
Display description			Mono Blue LCD		TFT Color LCD						
Display Size (inch)			14cm (5.7")				21cm (8.4")	21cm (8.4")	26cm (10.4")	31cm (12.1")	38cm (15")
Resolution			320×240				640×480			800×600	1024×768
Color			8-bit Gray Scale		256 color	65,536 color	256 color	65,536 color			
Backlight			LED			CCFL (whole LCD), auto On/Off	CCFL (Replaceable LCD), Auto on/off				
			50,000Hours			60,000Hours	50,000Hours				
Contrast			Adjustable		Fixed						
Luminance			230cd/m²		210cd/m²	400cd/m²	200cd/m²	480cd/m²	430cd/m²	400cd/m²	450cd/m²
Viewing angle	Up/Down(Degree)		20/40		80/80	70/50	20/20	50/60	45/65	45/75	50/60
	Left/Right(Degree)		45/45		80/80	70/70	45/45	65/65	65/65	65/65	75/75
Touch panel			4-wire system analog					8-wire system analog			
Movement LED			Green : Run (Monitoring, download drawing data) Red : Error (Communication error, drawing data error)								
Memory	Display data		4MB	10MB	4MB	10MB	4MB	10MB			20MB
	Backup data		128kB	512kB	128kB	512KB (Logging, alarm data saving)	128kB	512KB (Logging, alarm data saving)			
Ethernet			-	1ch, IEEE802.3, 10/100Base-T	-	1ch, IEEE802.3, 10/100Base-T	-	1ch, IEEE802.3, 10/100Base-T			
USB interface			USB Host×1	USB Host×2	USB Host×1	USB Host ×2	USB Host×1	USB Host ×2			
Serial	RS-232C		2ch (1 port for PC Communication)								
	RS-422/485		1ch, 422/485 optional mode								
CF memory card interface			-	CF card (TYPE-I) ×1	-	CF card (TYPE-I) ×1	-	CF card (TYPE-I) ×1			
AUX interface			-	Optional	-	Optional	-	Optional			
Certification			CE, UL, KCC								
Protection			IP65F (Front Water Proof Structure)								
Size (W×H×D)mm			181×140×56.5	181×140×66.5	181×140×56.5	181×140×66.5	240×174×63	240×174×73	317×243×73		395×249×73
Panel Cut (W×H)mm			155.5×123				228×158		294×227		383×282
Weight (kg)			0.62	0.75	0.62	0.75	1.2	1.4	2.2	2.4	3.9
Power	Rated voltage		DC 24V						AC100~220V, DC24V		AC100 ~ 220V
	Permitted voltage	AC	-						MIN 85 VAC, MAX 264 VAC		
		DC	MIN 19.2 VDC, MAX 28.8 VDC								-
	Watt	AC	-						37	40	46
		DC	5	8.5	5	8.5	13	20	27	30	-

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 requirements - 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)	

Micro PLC comparison table

Features

	K120S		XGB	
	Economic type	Standard type	XBM	XBC
Memory				
User Program	2k steps	10k steps	10k steps	15k steps
EEPROM	✔	✔	-	-
Flash memory	-	-	✔	✔
Back-up Memory Module	✔	✔	✔	✔
I/O				
Embedded I/O (max.)	20	60	32	64
Local Expansion (max.)	40	60	224	320
Added functionality				
Analog input (expansion)	4Current or Voltage inputs	4Current or Voltage inputs	4Current or Voltage inputs	4Current or Voltage inputs
Analog output (expansion)	4Current outputs	4Current outputs	4Current outputs	4Current outputs
	4Voltage outputs	4Voltage outputs	4Voltage outputs	4Voltage outputs
Analog In/Out (expansion)	2Current or Voltage inputs 2Current or Voltage outputs	2Current or Voltage inputs 2Current or Voltage outputs	-	-
	2Current or Voltage inputs 1Current or Voltage outputs	2Current or Voltage inputs 1Current or Voltage outputs	-	-
PID (embedded)	-	✔	✔	✔
High Speed Counters (embedded)	2phase 10kHz (1phase) or 1phase 5kHz (2phase)	2phase 100kHz (1phase) 2phase 20kHz (1phase) or 1phase 50kHz (2phase) 1phase 10kHz (2phase)	4phase 20kHz (1phase) or 2phase 10kHz (2phase)	4phase 100kHz (1phase) 4phase 20kHz (1phase) or 2phase 50kHz (2phase) 2phase 10kHz (2phase)
RTD (expansion)	✔	✔	✔	✔
Thermocouple (expansion)	-	-	✔	✔
Real Time Clock	Optional	Optional	-	Built-in
Floating Point Math	-	-	✔	✔
Position; Pulse Width Modulated	-	2Axis 100kHz (DRT/DT type)	2Axis 100kHz (DN type)	2Axis 100kHz (DN type)
Programming				
Windows software	KGLWIN	KGLWIN	XG5000	XG5000
Communications				
Download port	Serial	Serial	Serial	Serial + USB
RS-232 Ports (Communication port)	1ch RS-232C or RS-485	✔	✔	✔
Profibus module (Slave)	✔	✔	-	-
DeviceNet module (Slave)	✔	✔	-	-
RS-422/485 (embedded)	1ch RS-485	1ch RS-485	1ch RS-485	1ch RS-485
Ethernet (expansion)	-	-	✔	✔
Operating Power	DC12V/24V AC100~240V	DC12V/24V AC100~240V	DC24V	DC24V AC100~240V

Green Innovators of Innovation

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 a 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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Specifications in this catalog are subject to change without notice due to continuous product development and improvement.

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2013. 01 Programmable Logic Controller(E) 2006. 09/(20) 2013. 01 Printed in Korea Pacomkorea