



MASTER-K

Series



Newly designed MASTER-K series provide open distributed



- Smallest Micro PLC (W120×H80×D65mm)
- Program Capacity : 800 Steps
- I/O Points : 14 (I/O=8/6)
- Built-in High Speed Counter (1Phase, 8K pps)
- RS-232C/RS-485 Interface up to 32 CPUs linked via RS-485 Interface

MASTER-K10S1

UL Number : E124950

MASTER-K Series

MASTER-K80S



- High Speed Performance : 0.5 μ s/Step
- Compact Size
- Program Capacity : 7K Steps
- I/O Points : 10~80 Points
- Expansion Unit : 10 Points
- Built-in Special Functions
 - PID Control, High Speed Counter, Pulse Output
 - RS-232Port, Input Filter, Pulse Catch
- Special Function Modules
 - Analog I/Os, Analog Timer
- Communication Modules
 - RS-232C, RS-422/485 (Modbus, AB DF₁ Protocol available)

automation solutions.

MASTER-K Series



MASTER-K200S

- High Speed Performance (0.5 μ s/Step)
- Program Capacity : 7K Steps
- I/O Points : Up to 384
- Special Function Modules
 - Analog I/Os, High Speed Counter, Position Control Modules
- Communication Modules
 - RS-232C, RS-422/485 (Modbus, AB DF_i Protocol available),
Fieldbus (Fnet)
- On-line Editing
- Various Debugging and Self-Diagnosis
 - Sampling Trace & Trigger Functions

CONTENTS

- 4 MASTER-K Series
- 6 K10S1
- 8 K80S
- 12 K200S
- 14 K300S
- 18 MASTER-K Fnet (Fieldbus) System
- 20 MASTER-K Cnet System
- 22 Analog Input Modules
- 23 Analog Output Modules
- 24 Thermocouple Input Modules
- 25 RTD Control Modules
- 26 PID Control Modules
- 27 High Speed Counter Modules
- 28 Position Control Modules
- 30 Analog Timer Modules
- 32 Hand Held Loader Code List
- 33 Graphic Loader
- 34 Monitoring System (PMU Series)
- 36 Products List

MASTER-K Series

MASTER-K300S



- High Speed Performance : 0.2 μ s/Step
- Program Capacity : 15K Steps
- I/O Points : Up to 512
- Various Special Function Modules
 - Analog I/Os, PID, RTD, TC, HSC, Positioning Modules
- Communication Modules
 - RS-232C, RS-422/485 (Modbus, AB DF_i Protocol available),
Fieldbus (Fnet)
- On-line Editing
- Various Debugging and Self-Diagnosis
 - Sampling Trace & Trigger Functions



● MASTER-K SERIES

- Various block and module types
- High speed performance (Up to 0.2 μ s/Step)
- Special function modules
Analog I/Os, HSC, PID, Positioning, RTD, TC, AT, etc.
- Powerful Network
DeviceNet, Fieldbus (Fnet), RS-232C/RS-485 Interface
- Windows based programming software KGLWIN
(windows 95/98/NT)

● General Specification

Items	Description			
Rated Input Voltage	AC100~120V/200~240V (50/60Hz)			
Operating Input Voltage	AC85~132V/170~264V (47~63Hz)			
Ambient Temperature	0~55°C			
Storage Temperature	-25~70°C			
Ambient Humidity	5~95%RH (Non-condensing)			
Storage Humidity	5~95%RH (Non-condensing)			
Vibration	IEC61131-2	Frequency	Continuous vibration	Occasional vibration
		10 \leq f<57Hz	Pulse width 0.035mm	Pulse width 0.075mm
		57 \leq f<150Hz	Acceleration 0.5g	Acceleration 1.0g
Shocks	KSC0241 (15K, 3 times each direction, each axis)			
Breakdown Voltage	AC Type : 1,500V for 1minute (between AC terminal and frame ground terminal)			
	DC Type : 500V for 1minute (between DC terminal and frame ground terminal)			
Insulation Resistance	100M Ω or more between AC/DC terminal and frame ground terminal (measured with 500Vdc megger)			
Noise Immunity	1500Vp-p with pulse width 1 μ s (frequency : 25~60Hz)			
Grounding	100 Ω or less grounding resistance			
Operating Atmosphere	Free from corrosive gases and excessive dust			

Performance (Block Type)

Items		K10S1	K80S	
Control Method		Cyclic execution of stored program		
I/O Updating Method		Program refresh per 1 scan		
Program Languages		Mnemonic, Ladder		
Instruc- tions	Basic Instruction	30		
	Application Instruction	154	218	
I/O Point (Max.)		14	10~80	
Program Capacity (Step)		800	7K	
Processing Speed		3.2~7.6 μ s/Step	0.5 μ s/Step	
Data Type	I/O Relay (P)	P0000~P001F (32)	P0000~P015F (256)	
	Auxiliary Relay (M)	M0000~M015F (256)	M0000~M191F (3,072)	
	Keep Relay (K)	K0000~K007F (128)	K0000~K031F (512)	
	Link Relay (L)	L0000~L007F (128)	L0000~L063F (1,024)	
	Special Relay (F)	F0000~F015F (256)	F0000~F063F (1,024)	
	Timer (T)	100ms	T000~T031 (32)	T000~T191 (192)
		10ms	T032~T047 (16)	T192~T255 (64)
	Counter (C)	C000~C015 (16)	C000~C255 (256)	
	Step Controller (s)	S00.00~S15.99 (16 \times 100Step)	S00.00~C99.99 (100 \times 100Step)	
	Data Register (D)	D0000~D0063 (64Words)	D0000~D4999 (5,000Words)	
Timer (5 Type)		On delay, Off delay, Accumulation, Monostable, Retriggerable timer		
Counter (4 Type)		Up, Down, Up-down, Ring counter		

Performance (Module Type)

Items		K200S	K300S	
Control Method		Cyclic execution of stored program		
I/O Updating Method		Program refresh per 1 scan		
Program Languages		Mnemonic, Ladder		
Instruc- tions	Basic Instruction	30		
	Application Instruction	218		
I/O Point (Max.)		384	512	
Program Capacity (Step)		7K	15K	
Processing Speed		0.5 μ s/Step	0.2 μ s/Step	
Data Type	I/O Relay (P)	P0000~P023F (384)	P0000~P031F (512)	
	Auxiliary Relay (M)	M0000~M191F (3,072)		
	Keep Relay (K)	K0000~K031F (512)		
	Link Relay (L)	L0000~L063F (1,024)		
	Special Relay (F)	F0000~F063F (1,024)		
	Timer (T)	100ms	T000~T191 (192)	
		10ms	T192~T255 (64)	
	Counter (C)	C000~C255 (256)		
	Step Controller (s)	S00.00~C99.99 (100 \times 100Step)		
	Data Register (D)	D0000~D4999 (5,000Words)		
Timer (5 Type)		On delay, Off delay, Accumulation, Monostable, Retriggerable timer		
Counter (4 Type)		Up, Down, Up-down, Ring counter		



UL CE Listed

S E R I E S
K10S1

● Feature

- **Smallest micro - PLC**
K10S1 Base : 14 (I/O = 8/6)
Size : 120W × 80H × 65D
- **Built-in high speed counter**
Counting speed : Max. 8K pps
- **EEPROM**
No battery back-up is required
- **Powerful network**
Built-in RS-232C/RS-485 Interface

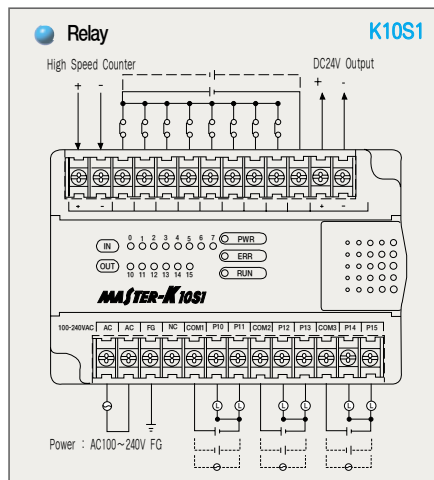
● System Configuration

Items		Specification		
		K10S1		
Control Method		Cyclic execution of stored program		
I/O Updating Method		Program refresh per 1 scan		
Program Languages		Mnemonic, Ladder		
Instructions	Basic Instructions	30		
	Application Instructions	154		
Processing speed		3.2~7.6 μ s/Step		
Program Capacity		800Steps		
Data Type	I/O Relay (P)		P000~P01F (32)	
	Auxiliary Relay (M)		M000~M15F (256)	
	Keep Relay (K)		K000~K07F (128)	
	Link Relay (L)		L000~L07F (128)	
	Special Relay (F)		F000~F15F (256)	
	Timer (T)	100ms	T000~T031 (32)	
		10ms	T032~T047 (16)	
	Counter (C)		C000~C015 (16)	
	Step Controller (S)		S00.00~S15.99 (16X100Step)	
Data Register (D)		D000~D063 (64Words)		
Timer (5 Type)		On delay, Off delay, Accumulation, Monostable, Retriggerable timer		
Counter (4 Type)		Up, Down, Up-down, Ring counter		
Serial Interface		RS-232C : 9,600bps, RS-485 : 300~19,200 bps, 32 Stations, 500m		

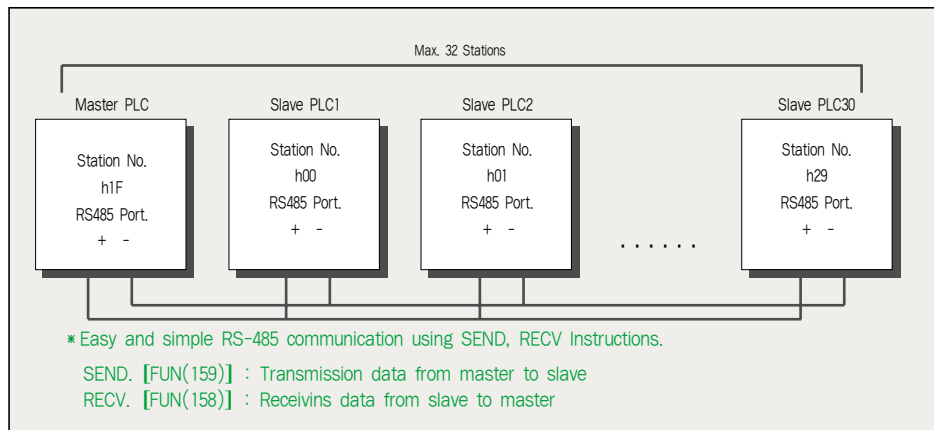
I/O Specification

Items	Type	Input	Output
Power Supply		AC100~240V (Free), (DC : DC24V Input)	
I/O Points	Base	8	6
	Expansion	6	4
Rated Voltage	Input	DC24V	—
	Output	—	AC220V, DC24V
Rated Current	Input	7±2mA	—
	Output	—	2A/Point, 3A/1com
Response Time	Off→On	5ms or less	10ms or less
	On→Off	7ms or less	10ms or less
Common Method	Base	8 Point/1com	2 Point/1com
	Expansion		1 Point/1com
Type		—	Relay
Insulation Device		Photo coupler	

Wiring Diagram



Network System





UL CE Listed

SERIES
K80S

Feature

- **Compact size and high function type**
 - Base : 10, 20, 30, 40, 60 Points
 - Expansion : 10 Points
- **Various built-in function for applications**
 - One(1) High Speed Counter (1 Phase 16kHz, 2 Phases 8kHz)
 - One(1) Pulse Train Output(2kHz)
 - Eight(8) PID Control with Auto Tuning
 - Eight(8) Pulse catch
 - One(1) RS-232C I/F (Dedicated, User Defined, Modbus Protocol)
- **Various special function modules**
 - Analog I/Os, Cnet I/F, Analog timer
- **RTC Pack, Memory pack(option)**
- **On-line Editing**

*Remark K7M-DR10S(/DC), K7M-DT10S : Built-in RS232C and RS-485 I/F

System Configuration

Items		Specification	
Program Control Method		Cyclic operation of stored program, Interrupt task operation	
I/O Updating Method		Refresh Method, Direct I/O method	
Programming Languages		Mnemonic, Ladder diagram	
No. of Instructions	Basic	30	
	Application	218	
Processing Speed		0.5 μ s/Step	
Program Capacity		7K Steps	
Data Memory	I/O Area (P)	P0000~P013F	
	Aux. Area (M)	M0000~M191F	
	Keep Area (K)	K0000~K031F	
	Link Area (L)	L0000~L063F	
	Special Area (F)	F0000~F063F	
	Timer (T)	100ms : T000~T191	
		10ms : T192~T255	
	Counter (C)	C000~C255	
	Step Control Area (S)	S00.00~S99.99	
Data Register (D)	D0000~D4999		
Built-in Special Function	PID Control	Controlled by instruction, Auto tuning, Forward/Reverse action, Forced output, Operation scan time setup	
	Cnet I/F Function (RS-232C)	Dedicated protocol, MODBUS protocol, User-defined protocol	
	High Speed Counter	Counting Speed	1 Phase : 16kHz (1 channel)
			2 Phase : 8kHz (1 channel)
		Counting Modes	3 Counting Modes
			- 1 Phase, Up/down count with program Input - 1 Phase, Up/down count with B phase Input - 2 Phase, Up/down count with phase difference
	Multiplication	Select one of 1, 2, or 4	
	Pulse Catch	Pulse width : 0.2ms, 8 Points	
	Pulse Output	1 \times 2kHz (Transistor output only)	
	External Interrupt	8 Points, 0.4ms	
Input filter	0~15ms		

*Remark : K7M - DR10S(/DC), K7M-DT10 : not available for Cnet I/F modules

Input

Item \ Type	Type					
	K7M-DR10S(/DC)	K7M-DR20S(/DC)	K7M-DR30S(/DC)	K7M-DR40S(/DC)	K7M-DR60S(/DC)	G7E-DR10A
Item	K7M-DT10S	K7M-DT20S	K7M-DT30S	K7M-DT40S	K7M-DT60S	-
Input Point	6	12	18	24	36	6
Insulation Device	Photo coupler					
Rated Input Voltage	DC12~24V					
Rated Input Current	DC12V 4.5mA, DC24V 9mA					
Operation Voltage	DC10.2~28.8V (Ripple : 5% or less)					
Max. Simultaneously On	100% Simultaneously on					
On Voltage/Current	More than DC9.5V/3.5mA(P000~P002 : 6.3mA)					
Off Voltage/Current	Less than DC5V/1.8mA(P000~P002 : 3.3mA)					
Input Impedance	About 2.7k Ω (P000~P002 : 1.5k Ω)					
Operation Indicator	Off \Rightarrow On	1~15ms				
	On \Rightarrow Off	1~15ms				
Operation Indicator	LED					
External Wiring	Terminal block (M3 \times 6Screw)					

* K7M-DR10S/DC, DR-20S/DC, DR30S/DC, DR40S/DC, DR60S/DC : DC 12~24V powered.

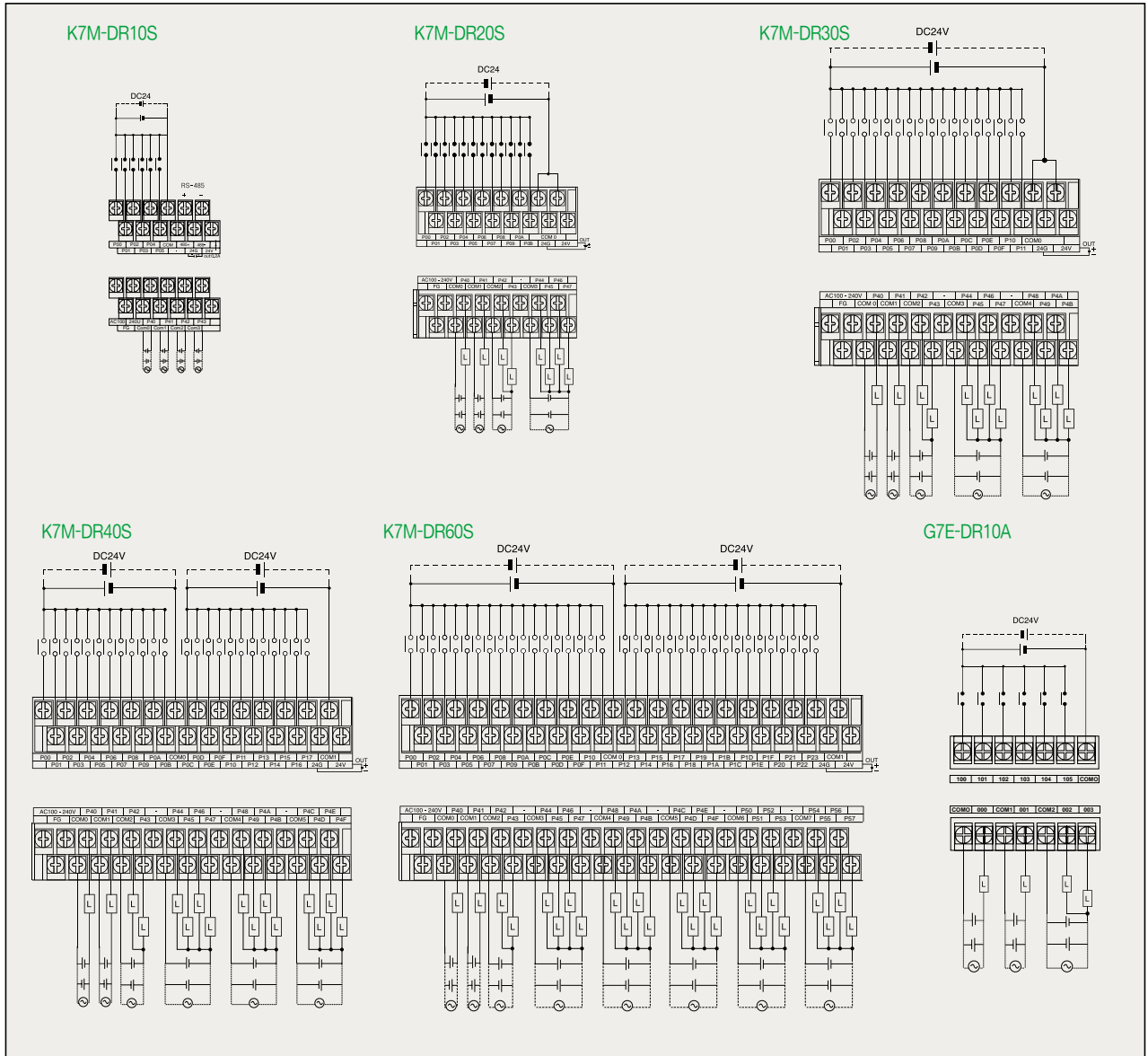
Output

Item \ Type	Type					
	K7M-DR10S(/DC)	K7M-DR20S(/DC)	K7M-DR30S(/DC)	K7M-DR40S(/DC)	K7M-DR60S(/DC)	G7E-DR10A
Item	K7M-DT10S	K7M-DT20S	K7M-DT30S	K7M-DT40S	K7M-DT60S	-
Output Point	4	8	12	16	24	4
Switching Device	Relay					
Insulation Device	Relay					
Rated Load Voltage /Current	DC24V/2A (Resistive load), AC220V/2A (COS ϕ =1) 1 Point 2A/1 Point/com, 4A/2 Points/com, 4A/4 Points/com					
Minimum Input	DC5V/1mA					
Mix. Load Voltage	AC250V DC110V					
Mix. Switching Frequency	1,200 Times/hour					
Surge Killer	None					
Lifetime of Relay	Mechanical	Over 20 million times				
	Electrical	Over 0.1 million times				
Response Time	Off \Rightarrow On	Within 10ms				
	On \Rightarrow Off	Within 12ms				
Operation Indicator	LED					
External Wiring	Terminal block (M3 \times 6Screw)					

Output(Transistor)

Item \ Type	Type					
	K7M-DT10S	K7M-DT20S	K7M-DT30S	K7M-DT40S	K7M-DT60S	-
Item	K7M-DT10S	K7M-DT20S	K7M-DT30S	K7M-DT40S	K7M-DT60S	-
Output Point	4	8	12	16	24	-
Rated Operating Voltage	DC 12/24					
Rated Operating Current	0.5A/1 Point, 3A/1com					
Response Time	Off \Rightarrow On	Less than 2ms				
	On \Rightarrow Off	Less than 2ms				
Common Method	8 Points/1com, Sink type					
Operation Indicator	LED					
Insulation Device	Photo coupler					
Surge Killer	Clamp diode					
Internal Power Consumption	170mA					

Wiring Diagram



System Configuration

● Base Unit

- Processing speed : 0.5 μ s
- Program capacity : 7k steps
- Type :

K7M-DR10S K7M-DR10S/DC K7M-DT10S
 K7M-DR20S K7M-DR20S/DC K7M-DT20S
 K7M-DR30S K7M-DR30S/DC K7M-DT30S
 K7M-DR40S K7M-DR40S/DC K7M-DT40S
 K7M-DR60S K7M-DR60S/DC K7M-DT60S

● Expansion Unit

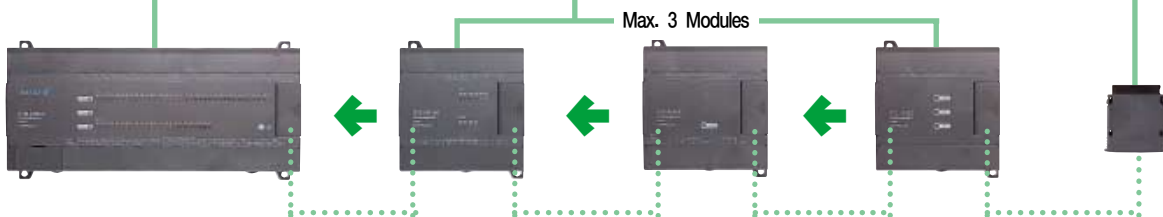
- Digital I/Output : DC 6 Points/Relay 4Point
- Analog I/O : Input 2ch, Output 1ch.
- Analog timer : 4 Points
- Cnet I/F: for RS-422/RS-232C (for modem)
- Fnet (Master) DevicNet (Slave)
- Profibus-DP (Slave)

● Available System

- Digital I/Output : 2 Modules
 - Analog I/O : 2 Modules
 - Analog Timer : 3 Modules
 - Link Module : 1 Module
- } Max. 3 Modules

● Option Pack

- RTC (Real time clock) Pack
- Memory pack (For program back-up)



Memory pack

*When only basic unit is used : connect to the expansion connector of the basic unit.

*When expansion unit is used : connect to the expansion connector of the last connected expansion unit.



Option Module

Analog I/O module (G7F-ADHA)



Items		Specification	
A/D Part	Analog Input	Voltage	DC0~10V
		Current	DC0~20mA or 4~20mA
	Digital Output Resolution	12bit (0~4,000)	
	Voltage/Current Selection	· Selected by dip switch · Short V and 1 terminal for current Input	
	Analog Input Channels	2channels/module	
D/A Part	Absolute Maximum Input	Voltage	DC+12V
		Current	DC+25mA
	Digital Output Resolution	12bit (0~4,000)	
	Analog Output	Voltage	DC0~20mA (load impedance 2kΩ~1MΩ)
		Current	DC0~20mA (load impedance 560 Ω) DC4~20mA (load impedance 560 Ω)
Voltage/Current Selection	Separated terminal		
Analog Input Channels	1channels/module		
Absolute Maximum Input	Voltage	DC+12V	
	Current	DC+24mA	
Max. Resolution	DC0~10V	2.5mV (1/4,000)	
	DC0~20mA	5μA (1/4,000)	
	DC4~20mA	6.25μA (1/3,200)	
Accuracy	±0.5% or less (Full scale)		
Conversion Time	Scan time+1.5ms/channels		
Insulation Device	Photo coupler between Input terminal and ground (No insulation between channels)		
External Wiring	14Point terminal block		
Power Supply	DC24V, 80mA		
Current Consumption	DC5V, 10mA		
Weight	240g		

Analog Potentiometer Module (G7F-AT2A)

- Four analog potentiometer can be used on the job manually to adjust set Points such as timer values of other variables, without going into PLC program.
- Adjustment can be made from the front part of the module using variable resistors

Items	Specification
No. of Timers	4 Point
Digital Output Range	(8bit) 0~200
Timers Setting	Set by adjustable volume switch
Accuracy Of Timer	±2.0% (Full scale)
Current Consumption	50mA
Weight	200g

Cnet I/F Module (G7L-CUEB, G7L-CUEC)

- RS-422/485 interface enables communication between computer and 32 PLCs using the multidrop System(G7L-CUEC)
- MODBUS Master/Slave mode can be used on a MODBUS RTU or ASCII mode
- Long distance communication through RS-232C modem connection(G7L-CUEB)
- Communication parameter setting can be made in Programming Tool(KGLWIN)

Items		Specification
Interface		RS-422, Modem (RS-232C)
Mode	Dedicated Mode	Supports multidrop/1:1 communication via LG dedicated protocol Supports high speed link service
	KGMWIN Mode	Supports remote control via MASTER-K PLC protocol
	Modbus Mode	Supports master and slave function with MODBUS Protocol (ASCII, RTU)
	User Mode	Operated with user-defined protocol
Date Structure	Date Bit	7 or 8
	Stop Bit	1 or 2
	Start Bit	1 or 2
	Parity	Even / Odd / None
Synchronization	Asynchronous method	
Transmission Speed	9,600/19,200/38,400/56,000/76,800/115,200/128,000 bps	
Setting Method	Parameter setting with KGLWIN software	
Max. Cable Length	500m	
Weight	180g	

Power Specification

Items		Specification	
Type		AC Powered	DC Powered
Input	Rated Voltage	AC100~240 (Free voltage)	DC12~24V (Free Voltage)
	Input Voltage Range	AC85~264V	DC10.2~28.8V
	Frequency	47~63Hz	-
	Inrush Current	30A (When the power turns on)	-
	Leakage Current	3mA or less (AC264V, 63Hz)	
	Fuse	250VAC 2A, UL Listed (Slow Blow Type)	250VAC 5A, UL Listed (Slow Blow Type)
	Dropout Tolerance	20ms or less	2ms or less
	Output Current	0.2A (Isolated from DC5V)	-
DC24V Output	Output Voltage	24V±10% (21.6~26.4V)	-
	Ripple Noise	400mVp-p	-
	Over-Current Voltage	0.22~1.5A	-



UL CE Listed

SERIES K200S

● Feature

- I/O Points : Max. 384
- High speed processing using dedicated MPU chip (0.5 μ s/step)
- On-line Editing
- Special function modules
Analog I/Os, High speed counter, Position control modules
- Standard network
Fieldbus (Fnet), RS-232C/RS-422/485
- Remote I/Os system using Fieldbus (Fnet)
GOL-SMQA, GOL-SMIA, GOL-SMHA
- Removable connectors on all modules
- Direct power supply to analog modules from power supply - DC \pm 15V (GM6-PAFB)
- Three(3) types of CPUs

● System Configuration

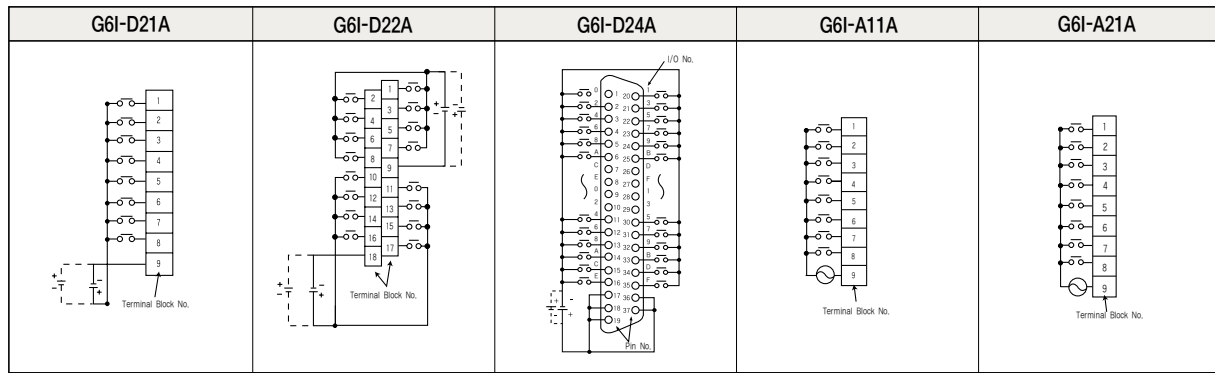
Items		Specification		
		K3P-07AS	K3P-07BS	K3P-07CS
Control Method		Cyclic execution of stored program, Interrupt task execution		
I/O Updating Method		Program refresh per 1 scan, Direct update by instruction		
Program Languages		Mnemonic, Ladder		
Instructions	Basic Instructions	30		
	Application Instructions	220		
Processing speed	Basic Instructions	0.5 μ s/Step		
Program Capacity(Step)		7K Step		
Data Type	I/O Relay (P)		P0000~P023F (384)	
	Auxiliary Relay (M)		M0000~M191F (3,072)	
	Keep Relay (K)		K0000~K031F (512)	
	Link Relay (L)		L0000~L063F (1,024)	
	Special Relay (F)		F0000~F063F (1,024)	
	Timer (T)	100ms	T000~T191 (192)	
		10ms	T192~T255 (64)	
	Counter (C)		C000~C255 (256)	
	Step Controller (S)		S00.00~S99.99 (100X100Step)	
Data Register (D)		D0000~D4999 (5,000Words)		
Timer (5 Type)		On delay, Off delay, Accumulation, Monostable, Retriggerable timer		
Counter (4 Type)		Up, Down, Up-down, Ring counter		
Special Functions		Program editing in run mode, Forced I/O On/Off		
Operating Mode		Run, Stop, Pause, Debug		
Max. Expansion		No expansion board		
Self-Diagnosis		Execution delay, Memory error, I/O error, Battery error, Power supply error, etc.		
Other Functions		Built-in RS-232C	Built-in RS-485, RTC, PID	Built-in RS-232C, HSC, PID, RTC

*User defined mode is not included in built-in serial interface

Input Module

Items	Type	DC Input			AC Input	
		G6I-D21A	G6I-D22A	G6I-D24A	G6I-A11A	G6I-A21A
Input Point		8	16	32	8	
Rated Input Voltage		DC12/24V			AC100~120V	AC200~240V
Rated Input Current		3mA/7mA			7mA	11mA
Response Time	Off→On	5ms or less			15ms or less	
	On→Off	5ms or less			25ms or less	
Common Method		8/1com		32/1com	8/1com	
Type		Sink/Source type		Sink/Source type	—	
Insulation Device		Photo couple				
Operating Indicator		LED				
Internal Power Consumption(5Vdc)		40mA	70mA	75mA	40mA	

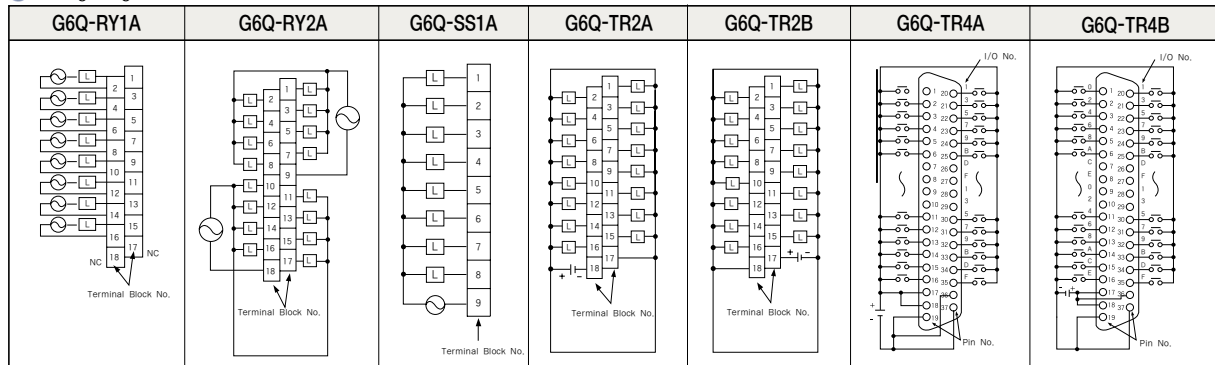
Wiring Diagram



Output Modules

Items	Type	Relay Output		Triac Output	Transistor Output			
		G6Q-RY1A	G6Q-RY2A	G6Q-SS1A	G6Q-TR2A	G6Q-TR2B	G6Q-TR4A	G6Q-TR4B
Output Point		8	16	8	16		32	
Rated Operating Voltage		DC12/24V, AC100~220V		AC100~240V	DC12/24V			
Rated Operating Current		2A/1 Point	2A/1 Point, 5A/1com	0.6A/1 Point, 4A/1com	0.5A/1 Point, 4A/1com		0.1A/1 Point, 2A/1com	
Response Time	Off→On	10ms or less		1ms or less	2ms or less			
	On→Off	12ms or less		0.5cycle+1ms or less	2ms or less			
Common Method		1 Point/1com	8 Point/1com	8 Point/1com	16 Point/1com	16 Point/1com	32 Point/1com	32 Point/1com
Type		—		—	Sink type	Source type	Sink type	Source type
Insulation Device		Relay		—	Photo coupler			
Surge Killer		—		Varistor, CR, Absorber	Clamp diode			
External Power Supply		—		—	DC24V			
Operating Indicator		LED						
Internal Power Consumption(5Vdc)		210mA	400mA	190mA	180mA	170mA	140mA	120mA

Wiring Diagram





CE Listed

SERIES
K300S

Features

- I/O Points : Max. 512
- Processing speed : 0.2 μ s/Step
- On-line editing
- Special function modules
Analog I/Os, PID, High speed counter, Position control, AT, TC, RTD modules, etc.
- Standard Network
Fieldbus (Fnet), RS-232C, RS-422/485
- Remote I/Os using Fieldbus (Fnet) interface
GOL-SMQA, GOL-SMIA, GOL-SMHA
- Removable connectors on all modules

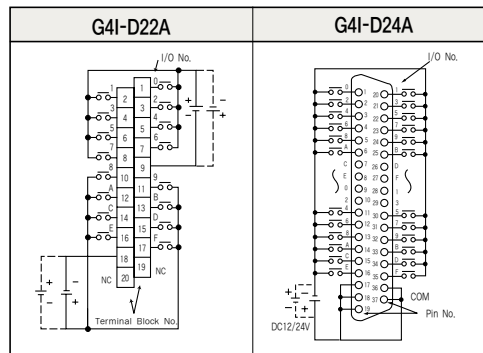
System Configuration

Items		Specification	
		K4P-15AS	
Control Method		Cyclic execution of stored program, Interrupt task execution	
I/O Updating Method		Program refresh per 1 scan, Direct update by instruction	
Program Languages		Mnemonic, Ladder	
Instructions	Basic Instructions	30	
	Application Instructions	220	
Processing speed	Basic Instructions	0.2 μ s/Step	
Program Capacity		15K Step	
Data Type	I/O Relay (P)	P0000~P031F (512)	
	Auxiliary Relay (M)	M0000~M191F (3,072)	
	Keep Relay (K)	K0000~K031F (512)	
	Link Relay (L)	L0000~L063F (1,024)	
	Special Relay (F)	F0000~F063F (1,024)	
	Timer (T)	100ms	T000~T191 (192)
		10ms	T192~T255 (64)
	Counter (C)	C000~C255 (256)	
	Step Controller (S)	S00.00~S99.99 (100X100Step)	
Data Register (D)	D0000~D4999 (5,000Words)		
Timer (5 Type)		On delay, Off delay, Accumulation, Monostable, Retriggerable timer	
Counter (4 Type)		Up, Down, Up-down, Ring counter	
Serial Functions		Program editing in run mode, Forced I/O On/Off, Debugging	
Operating Mode		Run, Stop, Pause, Debug	
Max. Expansion		Up to 3 expansions	
Self-Diagnosis		Execution delay, Memory error, I/O error, Battery error, Power supply error, etc.	
Other Function		RTC Function included	

Input Module

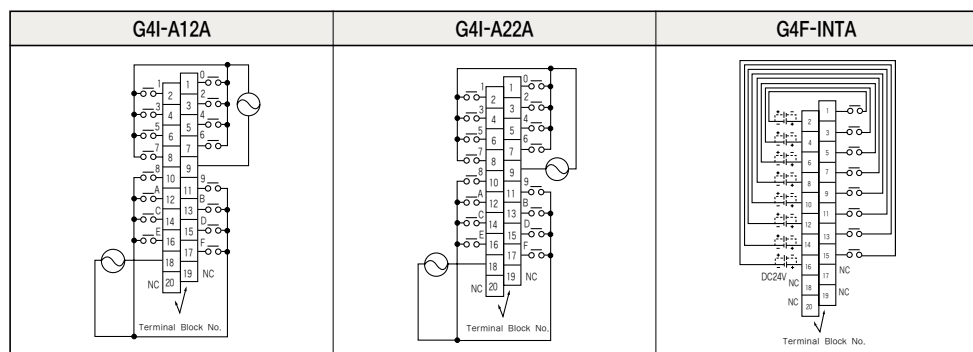
Items		Type	DC Input	
			G4I-D22A	G4I-D24A
Input Point			16Point	32Point
Rated Input Voltage			DC12/24V	
Rated Input Current			5/11mA	3/7mA
Operation Voltage	On		DC9.5V or more	DC9.5V or more
	Off		DC6V or less	DC6V or less
Response Time	Off→On		10ms or less	
	On→Off		10ms or less	
Common Method			8Point/1com	32Point/1com
Type			Source/Sink type	Source/Sink type
Insulation Device			Photo coupler	
Operating Indicator			LED	
Internal Power Consumption(DC5V)			70mA	75mA

Wiring Diagram



Items		Type	AC Input		Interrupt
			G4I-A12A	G4I-A22A	G4F-INTA
Input Point			16 Points		8Point
Rated Input Voltage			AC100~120V	AC200~240V	DC24V
Rated Input Current			11mA		10mA
Operation Voltage	On		AC80V or more	AC150V or more	DC15V or more
	Off		AC30V or less	AC50V or less	DC5V or less
Response Time	Off→On		15ms or less		0.5ms or less
	On→Off		25ms or less		0.5ms or less
Common Method			8Point/1com	1 Point/1com	
Type			—		
Insulation Device			Photo coupler		
Operating Indicator			LED		
Internal Power Consumption(DC5V)			70mA		

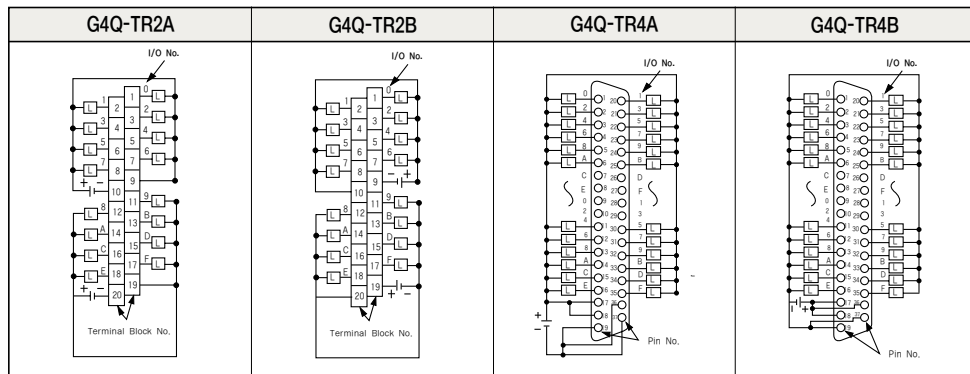
Wiring Diagram



Output Module

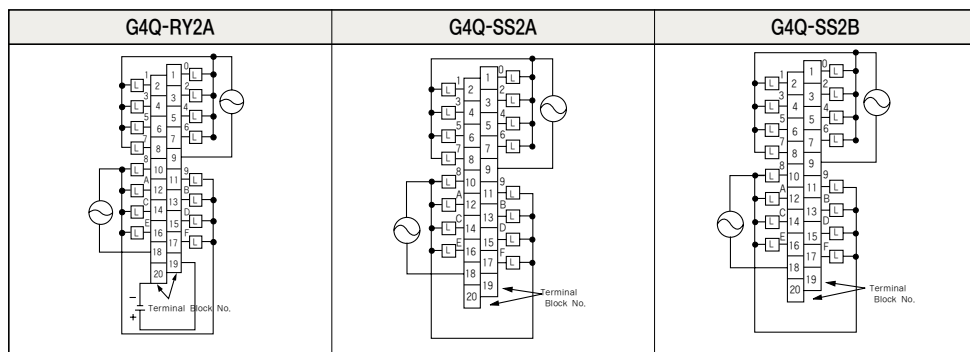
Items		Type	Transistor Output			
			G4Q-TR2A	G4Q-TR2B	G4Q-TR4A	G4Q-TR4B
Input Point			16 Points		32 Points	
Rated Input Voltage			DC12/24V			
Rated Input Current			0.5A/1 Point, 3A/1com		0.1A/1 Point, 2A/1com	
Response Time	Off→On		2ms or less			
	On→Off		2ms or less			
Common Method			8 Point/1com	8 Points/1com	32 Points/1com	32 Points/1com
Type			Sink type	Source type	Sink type	Source type
Insulation Device			Photo coupler			
Surge Killer			Varistor	—		
External Power Supply			DC24V			
Operation Indicator			LED			
Internal Power Consumption(DC5V)			100mA	100mA	160mA	160mA

Wiring Diagram



Items		Type	Relay Output	Triac Output	
			G4Q-RY2A	G4Q-SS2A	G4Q-SS2B
Output Point			16Point		
Rated Input Voltage			DC24V, AC100~220V	AC100~240V	
Rated Input Current			1A/1 Point, 4A/1com	1A/1 Point, 5A/1com	0.6A/1 Point, 2.4A/1com
Response Time	Off→On		10ms or less	0.5cycle+1ms or less	
	On→Off		12ms or less	0.5cycle+1ms or less	
Common Method			8Point/1com		
Type			—		
Insulation Device			Photo coupler		
Surge Killer			—	Varistor, CR Absorber	
External Power Supply			DC24V	—	
Operation Indicator			LED		
Internal Power Consumption(DC5V)			100mA	330mA	

Wiring Diagram

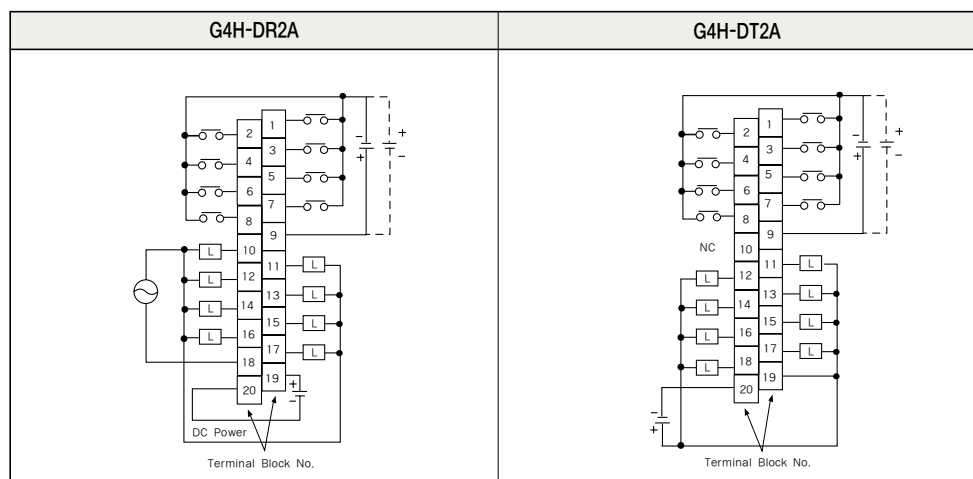


Input · Output Hybrid Module

Input Type		DC Input			
Items		G4H-DT2A		G4H-DR2A	
Input Point		8 Points		8 Points	
Rated Input Voltage		DC12V	DC24V	DC12V	DC24V
Rated Input Current		5mA	11mA	5mA	11mA
Off Voltage/Current		DC9.5V or more / 4.0mA or more			
On Voltage/Current		DC6V or less / 1.0mA or less			
Response Voltage	Off → On	10ms or less			
	On → Off	10ms or less			
Common Method		8 Points/1com			
Operating Indicator		LED			
Insulation Device		Photo coupler			
Internal Power Consumption(DC5V)		100mA		100mA	

Output Type		Transistor Output	Relay Output
Items		G4H-DT2A	G4H-DR2A
Output Point		8 Points	8 Points
Rated Operating Voltage		DC12/24V	DC24/AC220V
Rated Operating Current		0.5A/1 Point, 3A/1com	2A/1 Point, 5A/1com
Response Time	Off → On	2ms or less	10ms or less
	On → Off	2ms or less	12ms or less
Common Method		8 Points/1com	
Operating Indicator		LED	
Insulation Device		Photo coupler	
Surge Killer		Varistor	—

Wiring Diagram





MASTER-K Fnet (Fieldbus) SYSTEM

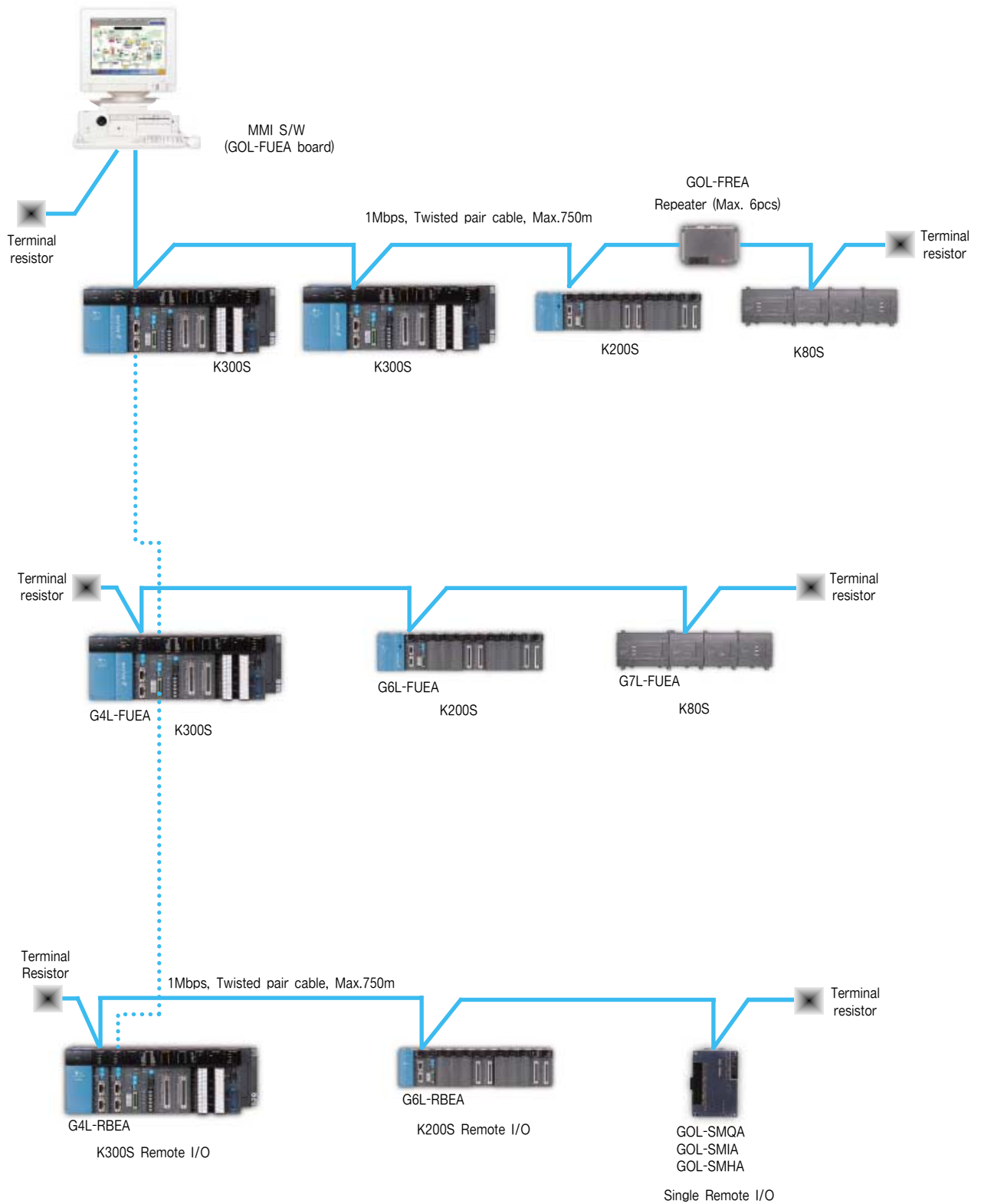
● Features

- Fnet, the LG dedicated fieldbus, is the local area network for the lower and medium cell and field area in an industrial environment
- Cable distance can be up to 5.25km using repeater.
- Transmission speed : 1Mbps,
Communication length : 750m
- Mounted up to 2 modules in a main base board

● Specification

Items		Electrical Module	
Baud Rate		1Mbps	
Encoding Method		Manchester Biphas-L	
Max. Cable Length		Max. 750m	
Max. Extension Distance		5.25km (Using Repeater)	
Transmission Medium		Twisted Pair Cable	
No. of Nodes		Max. 64	
Communication Method		Circulated Token Passing, Address Prove Method	
Comm. Module	Data size per each station	61,440 (3,840Word)	
	Sending Date Size	30,720 (1,920Word)	
	No. Data Block in Transmission	64 Blocks	
	Size of Data Block In Transmission	60 Word	
	Local Station	K300S	G4L-FUEA
		K200S	G6L-FUEA
		K80S	G7L-FUEA
		PC	GOL-FUEA
	Remote I/O Station	K300S	G4L-RBEA
		K200S	G6L-RBEA
Single I/O		GOL-SMQA, GOL-SMIA, GOL-SMHA	
Others		<ul style="list-style-type: none"> · Local station module : Mounted on I/O slot of a main base board · Remote I/O Station module : Mounted on CPU slot of a main base board · Communication module : Mountable up to 2 modules in a main base board 	

System Configuration





MASTER-K Cnet SYSTEM

Features

- Enables communication between a computer and a maximum of 32 programmable controllers using the multi drop system
- Abundant protocol communication using Frame Editor (Software tool)
- Communication method : Full-duplex and half-duplex
- Mounted up to 4 modules in a main base board (G4L-CUEA)
- Enables to use RS-232C of RS-422/485 port independently or concurrently
- Long distance communication through modem connection
(Serial communication)

Operation Mode

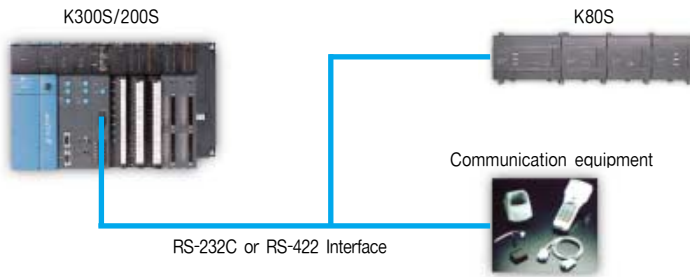
Operation Mode	Specification
KGLWIN-Protocol Mode	Through KGLWIN S/W (1:1 communication)
Dedicated Protocol Mode	Through dedicated protocol (RS-232C, RS-422/485)
user Defined Mode	Through user defined frame and function block
Test Mode	Through self-diagnosis

Specification

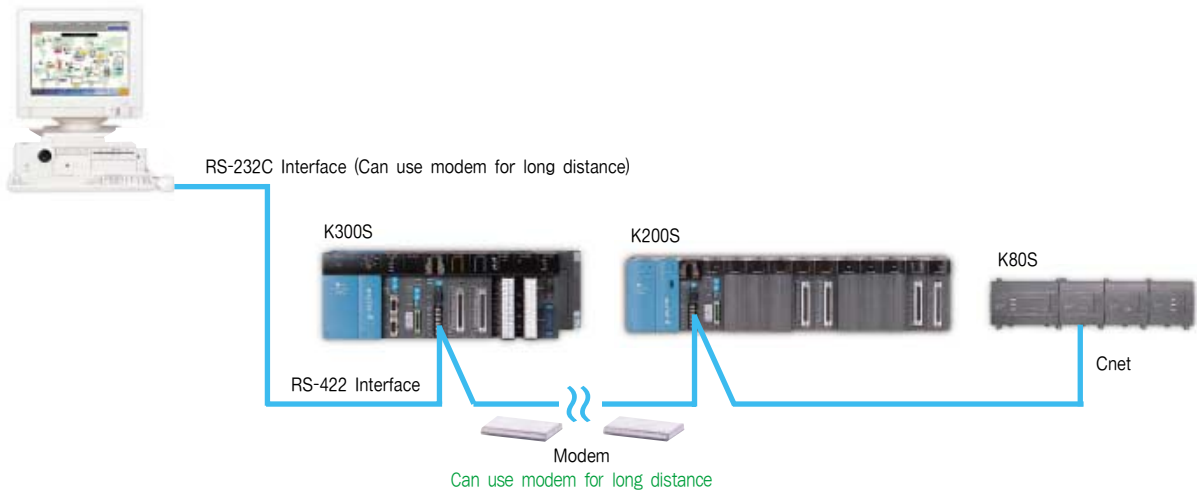
Items	G4L-CUEA	G6L-CUEC	G6L-CUEB	G7L-CUEB/C
Interface	RS-232C, RS-422/485	RS-422/485	RS-232C	RS-232C, RS-422/485
Communication Protocol	Dedicated, KGLWIN or user defined frame and function block			
Transmission	Data Bit	7 or 8		
	Stop Bit	1 or 2		
	Start Bit	1		
	Parity	Even / Odd / None		
Channel Select	Independently of concurrently via software	—	—	—
Synchronization Method	Asynchronous			
Baud Rate (bps)	300/600/1200/2400/4800/19200/38400 /153600			
Modem Communication	Though RS-232C channel	—	—	—
System Configuration	1:1, 1:N, N:N (N:Max. 32 Stations using RS-485)			1:1
Transmission Distance	RS-232C:Max.15m (Extended using modem), RS-422/485:Max.500m			
Max. Installation	8 Modules		4 Modules	
Diagnosis	16 LED display (Running)		16 LED display (Running)	

Computer Link System With Other Company's PLC

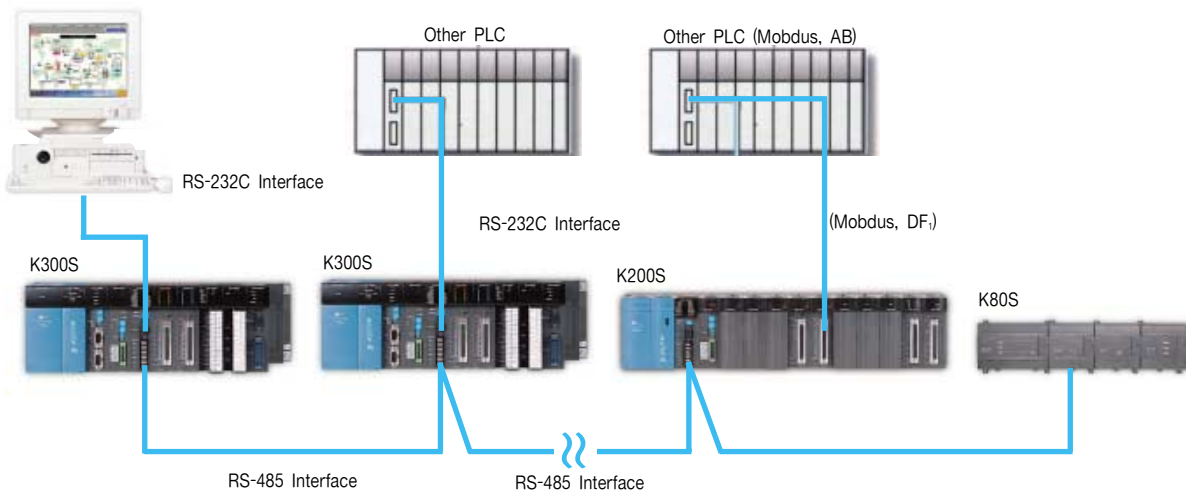
Communication With RS-232C/RS-422 Equipment Communication



1:N (LG PLC Link)



N:M (LG PLC + Other PLC)



Features

- 4/8 channels per module
- Selectable digital converted range per channel (G4F-AD2A)
- Selectable voltage/Current type by dip switcher terminal
- Converts ratios various by setting offset and gain values (G4F-AD2A)
- High resolution (1/16,000) (G4F-AD2A)

Analog Input Modules

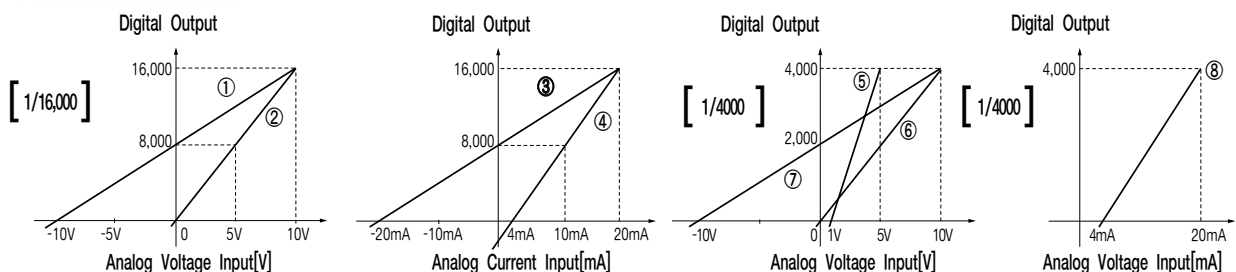
Specification

Items	Specification		
	G4F-AD3A	G4F-AD2A	G6F-AD2A
Type	K300S		K200S
Input Channel	8	4	4
Analog Input Range	Voltage	DC 1~5V, DC 0~10V	DC 1~5V, 0~10V, * DC -10~10V
	Current	* DC 4~20mA	* DC -20~20mA
	Voltage/Current Select	Setting by dip switch	
Digital Converted Range	0~4,000	-8,000~+8,000/0~16,000 (selectable per channel)	0~4000, -2000~2000
Max. Resolution	DC -5~+5V	—	0.625mV
	DC 1~+5V	1mV	—
	DC 0~+10V	2.5mV	—
	DC -10~+10V	—	1.25mV
	DC 4~20mA	4μA	—
	DC -20~+20mA	—	2.5μA
Over Accuracy	±0.5% (Full scale)		
Response Time	5ms/1channel	3ms/1channel	5ms/1channel
Absolute Input Range	Voltage	±12V	
	Current	±25mA	
Insulation	Photo coupler insulated input terminal and power supply (Net isolated between channel)		
Internal Current consumption	500mA	400mA	400mA
Processing	Sampling, Average	Filter, Sampling, Average	Sampling, Average
Setting OffSet/Gain	Impossible	Possible	Impossible
Possession Points	16 Points		

☞ K200S Analog input module use GM6-PAFB (Power supply) Only

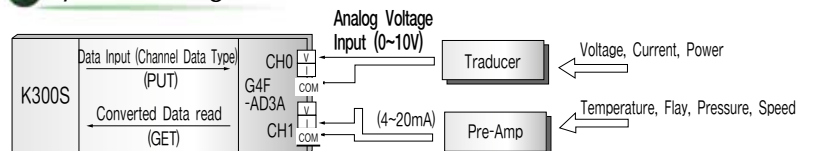
☞ *Default setting value

Feature of I/O Conversion



Example	Offset	Gain	Input Range
①	-10V	0V	-10~+10V
②	0V	5V	0~+10V
③	-20mA	0mA	-20~+20mA
④	4mA	12mA	+4~20mA
⑤	—	—	+1~+5V
⑥	—	—	0~+10V
⑦	—	—	-10~+10V
⑧	—	—	+4~20mA

System Configuration



Analog Output Modules

LG MASTER Series



Features

- 2/4/8 channels per module
- Various analog output type (Voltage/Current, Voltage, Current)
 Current : G4F-DA3I, G4F-DA2I, G6F-DA2I
 Voltage : G4F-DA3V, G4F-DA2V, G6F-DA2V
 Voltage, Current : G4F-DA1A
- Set table analog output state
 (While CPU stop, Middle Values, Previous Value, Max. Value, Min. Values)

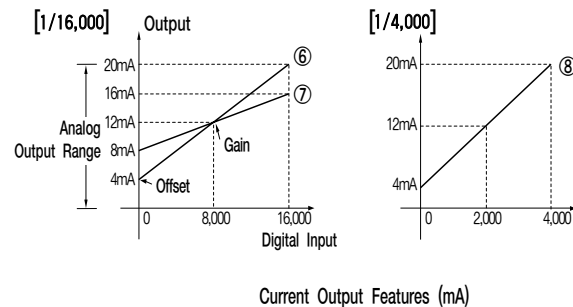
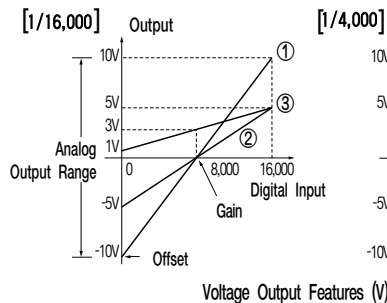
Specification

Items	Specification						
	G4F-DA1A	G4F-DA3V	G4F-DA2V	G4F-DA3I	G4F-DA2I	G6F-DA2V	G6F-DA2I
Type	K300S					K200S	
Output Channel	2	8	4	8	4	4	
Input Range	-8000~8000, 0~16000		0~4000				
Output	DC -10~10V DC 4~20mA	DC -10~10V		DC 4~20mA		DC -10~10V	DC 4~20mA
Max. Resolution	1.25mV/1μA	5mV		4μA		5mV	4μA
Overall Accuracy	±0.3% (Full scale)		±0.5% (Full scale)				
Response Time	3ms/2Ch	15ms/8Ch	10ms/4Ch	15ms/8Ch	10ms/4Ch		
Absolute Input Range	DC ±15V DC +24mA	DC ±15V		DC +24mA		DC ±15V	DC +24mA
Isolation Method	Photo coupler (between channels : not isolated)						
External Power	—			DC 24V	—		
Current Consumption (5V)	450mA	700mA	400mA	60mA	680mA	40mA	
(+15V)	—					80mA	120mA
(-15V)	—					60mA	25mA
Setting Offset/Gain	Possible	—					
Possession Points	16 Points						

☞ K200S Analog Mode Must Use GM6-PAFB Features of I/O Conversion

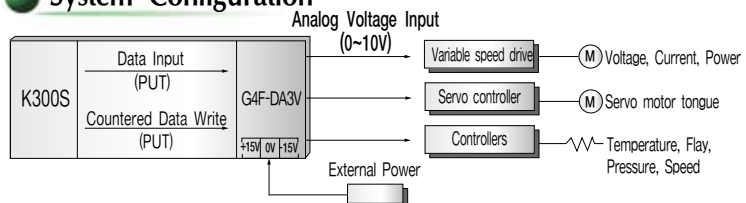
☞ *Default setting value

Feature of I/O Conversion



Example	Offset	Gain	Input Range
①	-10V	0V	-10~+10V
②	-5V	0V	-5~+5V
③	1V	3V	+1~+5V
④	—	—	-10~+10V
⑤	—	—	-5~+5V
⑥	4mA	12mA	4~20mA
⑦	8mA	12mA	8~16mA
⑧	—	—	4~20mA

System Configuration



Thermocouple Input Module

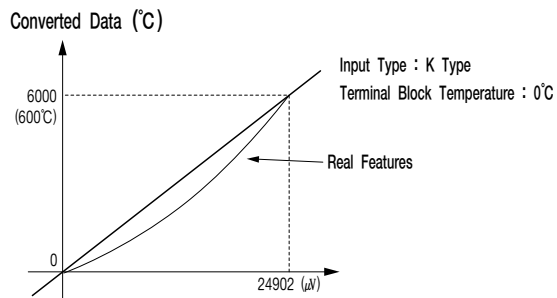
Features

- Max. 4 Channels input (G4F-TC2A)
- Thermocouple sensors compatible with K-J-E-T-B-R-S type
- Self-diagnostic function detection sensor's breakdown per channel
- Cold junction compensation is also equipped (Automatic)

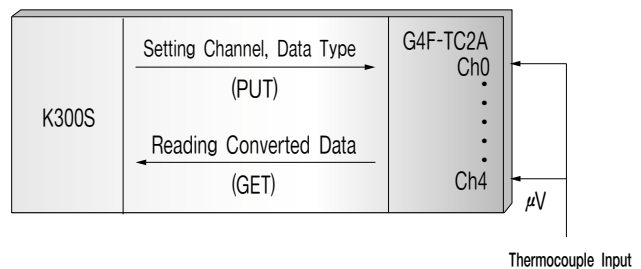
Specification

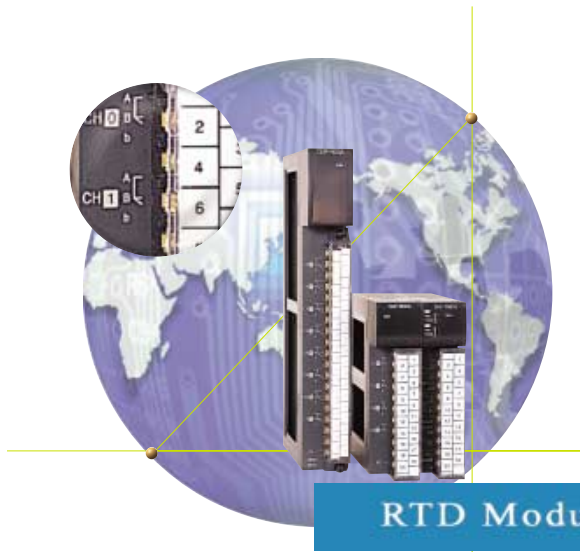
Items	G4F-TC2A				
Type	K300S				
Compatible Sensor Type	K, J, E, T, B, R, S (Set by each channel)				
Analog Channel	4 Channels				
Digital Converted Data	0~16,000 (Real temperature × 10)				
Input Range	TYPE	DIN	BS	Temperature (°C)	Voltage (μV)
	K	NiCr-Ni	NiCr-NiAl	-200.0~1,200.0	-5,891~48,828
	J	-	Fe-CuNi	-200.0~800.0	-7,890~45,498
	E	-	NiCr-CuNi	-150.0~600.0	-7,279~45,084
	T	-	Cu-CuNi	-200.0~400.0	-5,602~20,869
	B	-	PtRh30-PtRh6	400.0~1,800.0	786~13,585
	R	-	PtRh13-Pt	0.0~1,750.0	0~21,006
S	PtRh-Pt	PtRh10-Pt	0.0~1,750.0	0~18,612	
Cold Junction Compensation	Automatic				
Conversion Time	50ms/Channel				
Self-Diagnostic Detection Breakdown	Equipped in all channel				
Overall Accuracy	± (0.3% Full scale+RJC)				
Internal Current Consumption	450mA				
Possession Points	16 Points				

Features of I/O Conversion



Configuration





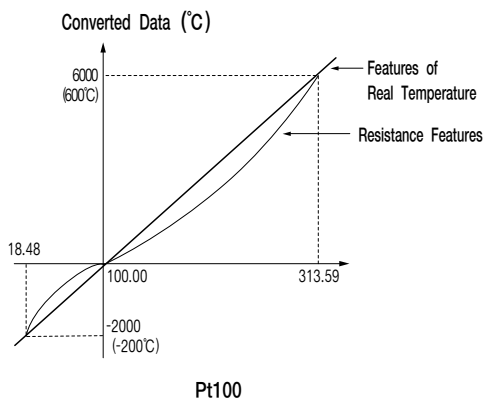
Features

- Compatible with 3-wired Pt. 100/DIN and JIS standard type
- Self-diagnostic function detection sensor's breakdown per channel
- High accuracy (less than 0.5% of full scale)

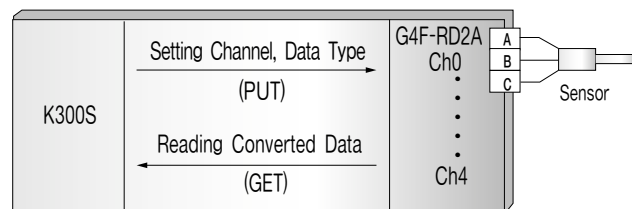
Specification

Items	G4F-RD2A
Type	K300S
Compatible Sensor Type	Pt100 (JIS C 1604-1989, DIN 43,760-1, 980) · JPt100 (KS C 1603-1991, JIS C 1604-1981)
Analog Channel	4 Channels
Digital Converted Data	Digital 0~16,000, Temperature -2,000~6,000 (Real temperatureX10)
Input Range	· Pt100: -200.0~600.0°C (18.48~313.59 Ω) · JPt100: -200.0~600.0°C (17.14~317.28 Ω)
Conversion Time	50ms/Channel
Self-Diagnostic Detection Breakdown	3-Wire detection per channel
Overall Accuracy	±0.5% (Full scale)
Internal Current Consumption	450mA
Possession Points	16 Points

Features of I/O Conversion



System Configuration



PID Control Module



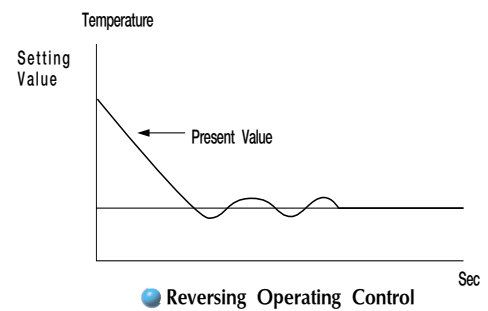
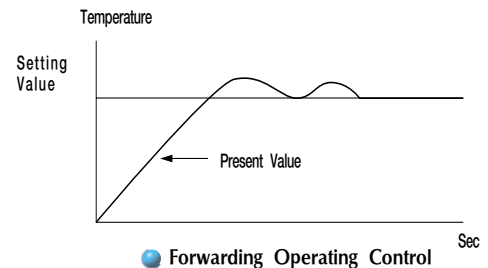
Features

- Number of loop : 8 maximum
- Forward/Reverse conversion selectable
- Manual output is available with manual manipulation value
- LED display for an error and operation condition of each loop

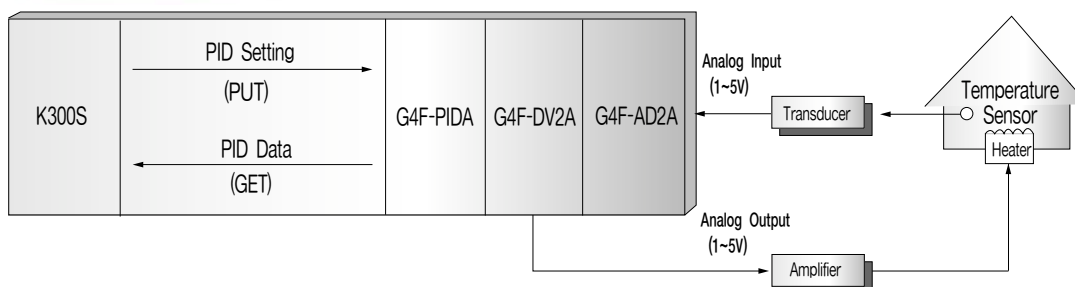
Specification

Items		G4F-PIDA
CPU Type		K300S
No. of PID Loop		8
PID Integer	Proportional Integer (P)	0.01~100.00 (%)
	Integral Integer (I)	0.0~3000.0 (sec)
	Differential Integer (D)	0.0~3000.0 (sec)
Setting Value (SV)		0~16000
Present Value (PV)		0~16000
Manipulated Value (MV)		0~16000
Manipulated Manually Value		0~16000
Indicator	Run/Stop	LED of designated loop on running ON
	Error	LED flicker
Control Action		Forward/Reverse operation control
Control Cycle		0.1sec.
Processing Type		Measured Value : Differential
Internal Current Consumption (5vds)		200mA
Possession Points		16 Points

Features of I/O Conversion



Configuration





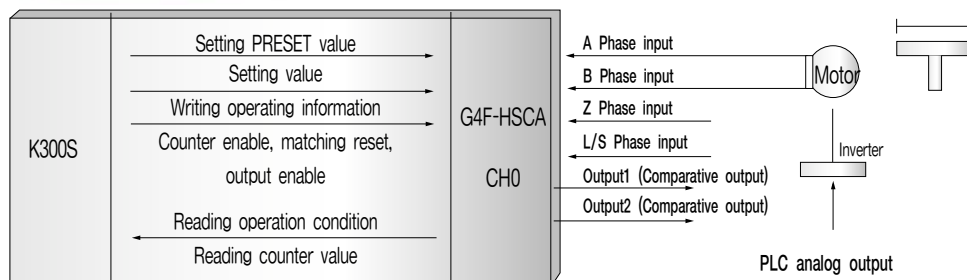
Features

- Counting range from 0 to 16,777,215 with overflow
Maximum input pulse rate of 50kHz
- Rated input voltage from 5 to 24V DC
- Control output for motor control
(Comparative output and matching output)
- I/O occupation : 32 Points

Specification

Items		G4F-HSCA	G6F-HSCA
Type		K300S	K200S
Input Channel		1 Channel	1 Channel
Input	Input signal	A Phase, B Phase, Z Phase (1Phase, 2Phase: Dip S/W)	
	Rated Input Voltage	DC 5V/12V/24V (7~13mA)	
	Signal Type	Voltage	
Counting Range		0~16, 777, 215 (Binary 24bit)	
Counting Speed		Max. 50kpps	
Setting Increment Decrement	1Phase Input	Set by program or by phase B	
	2Phase Input	Set by the difference of phase automatically	
Encoder Multiplier		×1/×2/×4 (Set by dip switch)	
Limit Switch Input		DC 24V	
PreSet Function		Set by Program	Set by program or terminal block
Output	Type	Out1, Out2 (>, =, < Can be inverted)	
	Single Type	Transistor output, DC 24V, 200mA	
Internal Current Consumption (5vds)		250mA	180mA
Possession Points		16 Points	

System Configuration



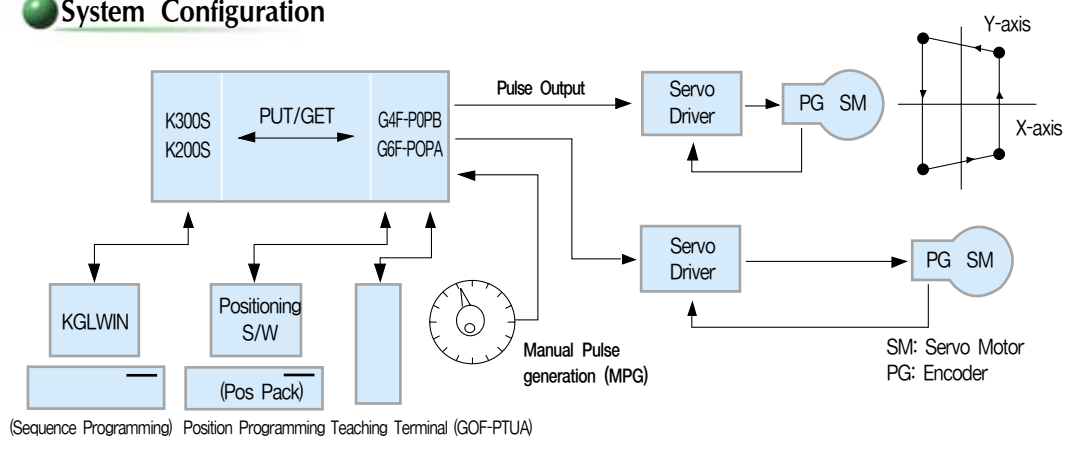


Position Control Module

Features

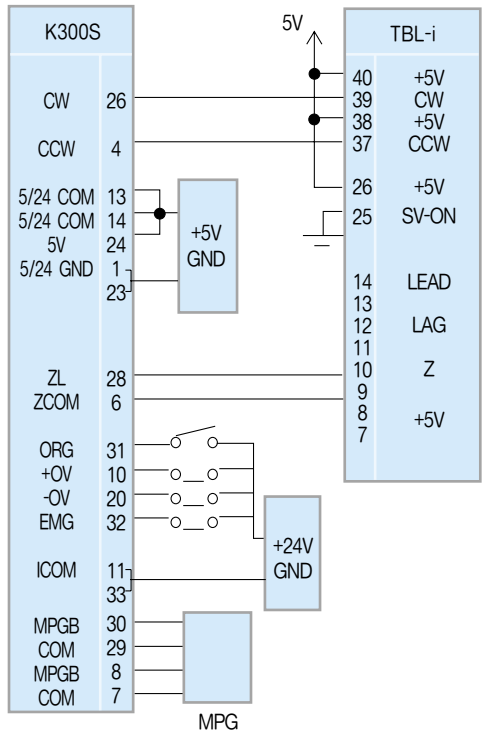
- High speed and highly precise positioning at a maximum 200 kpps (Max. 16,744,447 pulse)
 - Parameter & positioning data setting from the software package
 - Easy to use the teaching unit
 - Various positioning drive patterns
- I/O occupation : 32 Points

System Configuration

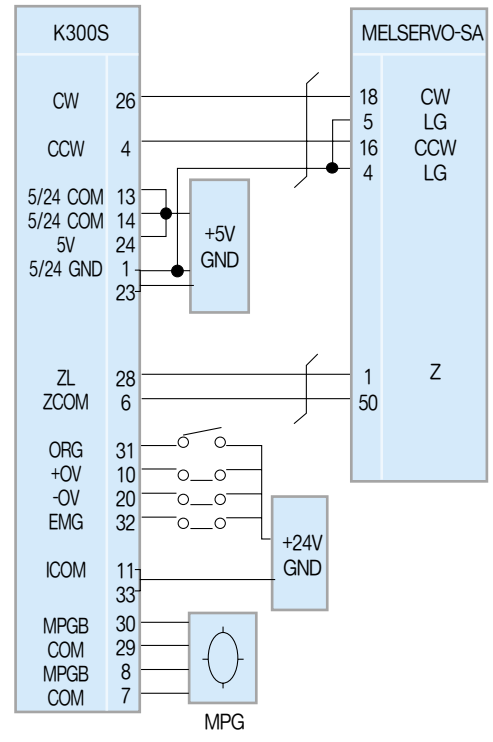


Wiring Diagrams

TAMAGAWA TBL-i Type (X-axis)



MITSUBISHI MELSERVO-SA Type (X-axis)



Specification

Items		G4F-POPB	G6F-POPA	
CPU Type		K300S	K200S	
Number of Control Axes		2-Axes Linear Interpolation (Simultaneously 2-Axes, Separately 2-Axes)		
Input/output Occupied Points		64		
Interpolation Function		PTP (Point to point), Linear interpolation, Speed control, Speed position switching control		
Control Method		Pulse		
Positioning Data		300 Data per Axis (Operation step No. 0~299)		
Peripheral Device	S/W Package	Available		
	Teaching Module	Available	Unable	
Positioning	Positioning Method	Absolute method / Incremental method		
	Position Address Range	Setting range : -16,744,447~16,744,447		
	Speed	Max.200Kpps	Speed setting range : 10~200,000 Speed setting data : 0~127	
	Acceleration/Deceleration Processing	Operation Pattern : Trapezoid method, Acceleration time : 10~9,990ms, Deceleration time : 10~9,990ms		
	Backlash Compensation	0~999 Pulse		
	Bias Speed	10~200,000		
	S/W Upper/Lower Limit	S/W upper limit setting range : 0~16,744,447	S/W Lower limit setting range : -16,744,447~0	
	Zone Setting	Setting Number : 3,	Setting Range : -16,744,447~16,744,447	
Position Passing Time		Setting Time : 0~9,990ms		
Operation Mode		Single operation, Repeated operation, Auto-operation, Continuous operation, Constant operation, Positioning constant operation		
Return to origin point	Compensation		Setting range : -999~999 Pulse	
	Speed	High	Speed setting range : 10~200,000	
		Low	Speed setting range : 10~200,000	
	Address		Setting range : -16,744,447~16,744,447	
	Dwell Time		Setting time : 0~9,990ms	
	Method	1	Methods by near zero point signal and origin point signal 1) Origin point detection after near zero point off 2) Origin point detection after deceleration at approximate origin point on	
		2	OriginPoint Detection by OriginPoint and Upper/Lower Limit	
3		OriginPoint Detection by near ZeroPoint		
Manual Operation	JOG		Yes	
	Manual Pulse Generator (MPG)	Yes	No	
	Inching	Setting range : 1~99		
	Speed/Position Teaching	ROM teaching	ROM/RAM teaching	
Others	Floating Point Set	Available		
	Present Position Preset	Available		
	M Code Mode	With, After, None		
	Continuous Operation (Next move)	Available		
	Speed Override	Setting range : 10~150%		
	Position Return Prior to Manual Operation	Available		
	Setting Operation Step No.	Available		
Connection Connector		34-Pin	37-Pin	
Isolation Method		Photo-coupler isolation between input terminal and PLC power (Isolation unavailable between channels)		
Current Consumption		350mA	280mA	
Weight		296g	137g	



Analog Timer Module

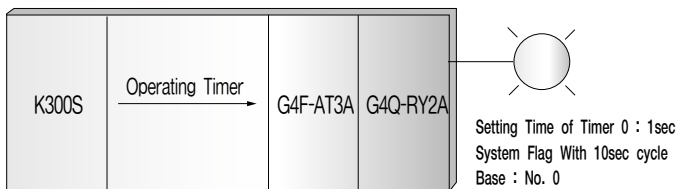
Features

- Setting and adjusting time of highly minute range by Timer
- Setting circuit using features of analog circuit is available
- Max. 8 Points of Analog Timer per module are applicable
- Wide range of setting time (0.1sec~600sec)
- Easy timer setting with only switch manipulation
- LED display for indication the Timer operation status
- Timer setting is available in run mode

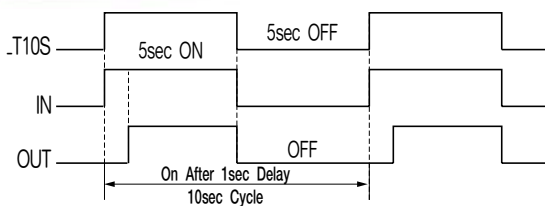
Specification

Items		G4F-AT3A
CPU Type		K300
Analog TimerPoints		8 Points
Timer Range of Setting Value		0.1~1.0sec, 1~10sec, 10~60sec, 60~600sec
Timer Setting Method		Setting by the adjustment volume
Timer Accuracy		±2.0% (Full scale)
Indicator	Operation LED	8 Points
	Contact LED	8 Points
Method		CR analog type (On-delay)
Internal Power Consumption		200mA

System Configuration



Timer Chart



Block Type Configuration

K80S



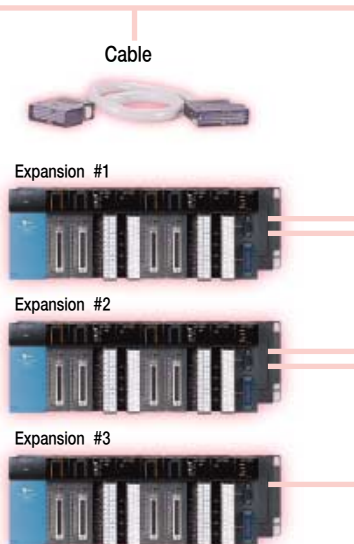
K80S	<ul style="list-style-type: none"> ● Base Unit + Max. 3 Expansion Unit - Digital I/O : Max 2 - Analog I/O : Max 2 - Analog Timer : Max 3 - Communication I/F : Max 1 <p style="text-align: right;">} Total Max. 3Made</p>
------	---

Module Type Configuration

K200S



K300S



		K200S	K300S
Max. Expansion		—	3 Expansions
Max. Expansion length		—	3m
Max. I/O Module		12 Modules	32 Modules
Max. I/O Point		384 Points	512 Points
Type	CPU Module	K3P-07AS/BS/CS	K4P-15AS
	Power Module	GM6-PAFA/GM6-PAFB GM6-PAFC/GM6-PDFA	GM4-PA1A/GM4-PA2A
	Base Unit	GM6-B04/06/08/12M	GM4-B04/06/08/12M
	Expansion Base	—	GM4-B04/06/08E
	Expansion Cable	—	G4C-E041/121/301
	I/O Module	G6I-□□□□ G6Q-□□□□	G4I-□□□□ G4Q-□□□□
	Special Module	G6F-□□□□	G4F-□□□□
Communication Module	G6L-□□□□	G4L-□□□□	

Hand-held Loader



K10S1



KLC-010A



K80S



K200S



K300S



KLC-015A



KLD-150S

General Specification

Items	Specifications
Storage Temperature Range	-10°C~50°C
Operating Temperature Range	0°C~40°C
Ambient Humidity Range	5~95% (Non-condensing)
Operating Ambience	Free from corrosive gases
Dimensions	90W×175H×36D
Weight	420g
Cooling Method	Self cooling

Performance Specification

Items	Specifications
Available PLC	MASTER-K series
Power Supply	Connected PLC. DC 5V 0.6A
Connection Method With PLC	Connected by loader cable Interface : RS-232C, 9.6Kbps (K10S1) 38.4Kbps (K80S, K200S, K300S)
LCD Display	16 Character, 2 line dot matrix LCD LCD BACK LIGHT : On/off by key operation turned off Automatically After 10 Min.since last key operation
Key Panel	3 Mode LED, 3 Mode Key, 48 Key-keypad Key-Buzzer function - Error or key operating - On/Off select function
Programming Method	On-Line : Inputs program direct PLC program

*Remark : K80S is available at KLD-150S Ver 4.0 or more.



LG MASTER Series



Graphic Loader MASTER-K Programming S/W



K10S1



KLC-010A

KLA-009A



K80S



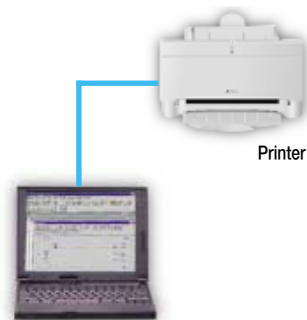
K200S



K300S



K1C-50A



Printer

Notebook

Features

- **Windows-based programming tool**
Windows 95, 98 and NT available
- **Portability with old program file**
GSIKGL, KGL-DOS based program can be converted
- **Easy to edit program and various monitoring function**
- **On-Line editing**
Program editing available while CPU runs
- **Powerful debugging and self-dial nosis**
Trigger, Forced I/O, step run, scan run, eat available

System Requirements

Items	Specifications
Operating System	Windows 95, 98, NT available
Applicable PC	IBM PC compatible
Memory (RAM)	8MB or more
FDD	3.5Inch or 5.25Inch
HDD	20MB or more
Serial	One serial port for program transfer
Printer	For windows 95 or more
Mouse	For windows 95 or more






Monitoring System(PMU Series)

CE Listed

Features

- High resolution of 240×128, 320×240 and 640×840 dot display available
- Function key and screen touch key supported (Except PMU-200)
- Simulation function available in the PMU-Master s/w with out connecting PMU series

Performance Specifications

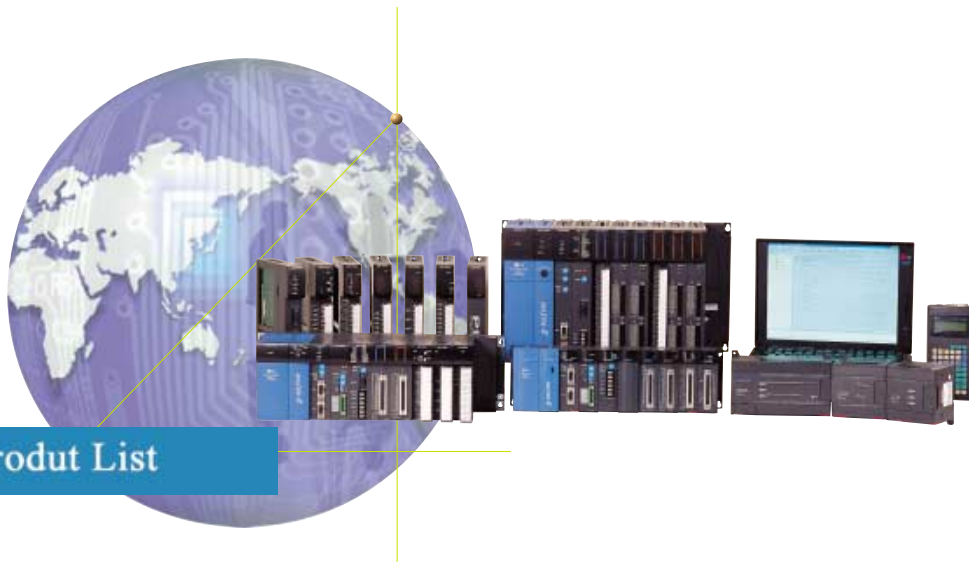
Items	PMU-600	PMU-300	PMU-200
Out			
Type	600TT	300BT	200BN
Display Devices	TFT-LCD	BLUE-LCD	BLUE-LCD
Resolution	640X840	320X240	240X128
Display size (mm)	211.1X158.3 (10.4")	115.12X86.32 (5.7")	119.97X63.97 (4.25")
Touch Screen	32X24 (20X20dot)	16X12 (20X20dot)	-
Display Color	16Color	1Color	
Dimensions (mm)	314WX256HX105D	229WX145HX92.5D	200WX130HX76D
Memory (Kbyte)	512 (Flash Memory)	256 (Flash Memory)	128 (Flash Memory)
Touch Key	Available	Available	Non
Function Key	12Keys	16Keys	
Power Supoly	AC110/220V (220V Default)	DC 24V	
Programing Tool	PMU-MASTER (WINDOWS 95/98/NT)		
Printer Port	Available	Non	
Applicable PLC	<ul style="list-style-type: none"> • GLOFA-GM (Cnet/Loader) • MASTER-K (60,200)H (Loader) • Starcon-MF (Link) • GLOFA-GM (Fnet, Dedicated) • Goldsec UC24/C24 • Omron (Sysmac-C) • MASTER-K (S)(Cnet/Loader) • Goldsec M2N, M3N ,M2A, M3A, M2U, M3U (Loader) • Modicon (Modbus) • MASTER-K (500, 1000)H (Link) • user-Defined Protocol • MASTER-K10S1 (Loader) • Goldsec M0J2, ANS (Loader) 		

● Instruction Code Table For Handy-Held Loader (KLD-150S)

0	0	1	2	3	4	5	6	7	8	9
00X	NOP	END	STC	CLC	RET	MPUSH	MLOAD	MPOP	STOP ●	CLE ●
01X	MCS	MCSCLR	JMP	JME	CALL	CALLP	SBRT	D	D NOT	
02X	INC	INCP	DINC	DINP	DEC	DECP	DDEC	DDECP	LD= ●	LDD= ●
03X	ROL	ROLP	DROL	DROLP	ROR	RORP	DROR	DRORP	LD> ●	LDD> ●
04X	RCL	RCLP	DRCL	DRCLP	RCR	RCRP	DRCR	DRCRP	LD< ●	LDD< ●
05X	CMP	CMPP	DC MP	DC MPP	TCMP	TCMPP	DTCMP	DTCMPP	LD>= ●	LDD>= ●
06X	BCD	BCDP	DBCD	DBCDP	BIN	BINT	DBIN	DBINP	LD<= ●	LDD<= ●
07X	WSFT	WSFTP	MULS ●	MULSP ●	BSFT	BSFTP	DMULS ●	DMILSP ●	LD<> ●	LDD<> ●
08X	MOV	MOVP	DMOV	DMOVP	CMOV	CMOVP	DC MOV	DC MOVP	DIVS ●	DIVSP ●
09X	GMOV	GMOVP	FMOV	FMOVP	AND= ●	ANDD= ●	AND> ●	ANDD> ●	AND< ●	ANDD< ●
10X	BMOV	BMOVP	XCHG	XCHGP	DXCHG	DXCHGP	AND>= ●	ANDD>= ●	AND<= ●	ANDD<= ●
11X	ADD	ADDP	DADD	DADDP	SUB	SUBP	DSUB	DSUBP	AND<> ●	ANDD<> ●
12X	MUL	MULP	DMUL	DMULP	DIV	DIVP	DDIV	DDIVP	DDIVS ●	DDIVSP ●
13X	ADDB	ADDBP	DADDB	DADDBP	SUBB	SUBBP	DSUBB	DSUBBP	PIDTUN ▼	PI DC AL
14X	MULB	MULBP	DMULB	DMULBP	DIVB	DIVBP	DDIVB	DDIVBP	PID&AT ♠	PID& ♠
15X	WAND	WANDP	DWAND	DWANDP	WOR	WORP	DWOR	DWORP	RECV ■	SEND ■
16X	WXOR	WXORP	DWXOR	DWXORP	WXNR	WXNRP	DWXNR	DWXNRP	RCV	SND ●
17X	BSUM	BSUMP	DBSUM	DBSUMP	SEG	SEGP	ENCO	ENCOP	DECO	DECOP
18X	FILR	FILRP	DFILR	DFILRP	FILW	FILWP	DFILW	DFILWP	OR=	ORD= ●
19X	ASC	ASCP	UNI	UNIP	DIS	DISP	OR>	ORD> ●	OR<	ORD< ●
20X	IORP	IORFP	WDT	WDTP	FALS	DUTY	FOR	NEXT ●	OUTOFF	
21X	HSCNT ■	DIN	DINP ■	DOUT ■	DOUPT ■	HSC	OR>= ●	ORD>= ●	OR<= ●	ORD<= ●
22X	BREAK ●	EI	DI	BEST ●	BRST	IRET	TDINT ●	INT	OR<>	ORD<> ●
23X	GET ●	GETP ●	RGET ●	RPUT ●	PUT	PUTP ●	BOU ●	SR	EI n	DI ●
24X	NEG ●	NEGP ●	DNEG ●	DNEGP ●	READ ●	WRITE ●	CONN ●	STATUS ●	BLD ●	BLDN ●
25X	BAND ●	BANDA ●	BOR ●	BORN ●	PLSOUT ▼	SND8 ▼	MODBUS ▼			

Caution

- : K300S, K200S Only Available
- : K10S1, Only Available
- ♠ : K200S (B/C)Type only Available
- ◆ : K10S1, K200S (C)Type only Available
- ▼ : K80S Only Available



Product List

● K10S1

Type	Part Number	Specification	Power Supply	Remarks
Base	K14P1-DRS	· 8 DC 24V Inputs · 6 Relay Output · user program : 800 Steps	AC 100~240V	*1

● K80S

Type	Part Number	Specification	Power Supply	Remarks	
Base Unit	K7M-DR10S	· 6 DC 12/24V Inputs · 4 Relay Outputs	AC 85~264V (Free voltage)		
	K7M-DR20S	· 12 DC 12/24V Inputs · 8 Relay Outputs			
	K7M-DR30S	· 18 DC 12/24V Inputs · 12 Relay Outputs			
	K7M-DR40S	· 24 DC 12/24V Inputs · 16 Relay Outputs			
	K7M-DR60S	· 36 DC 12/24V Inputs · 24 Relay Outputs			
	K7M-DT10S	· 6 DC 12/24V Inputs · 4 Transistor Outputs	AC 85~264V (Free voltage)		
	K7M-DT20S	· 12 DC 12/24V Inputs · 8 Transistor Outputs			
	K7M-DT30S	· 18 DC 12/24V Inputs · 12 Transistor Outputs			
	K7M-DT40S	· 24 DC 12/24V Inputs · 16 Transistor Outputs			
	K7M-DT60S	· 36 DC 12/24V Inputs · 24 Transistor Outputs			
	Base Unit	K7M-DR10S/ DC	· 6 DC 12/24V Inputs · 4 Relay Outputs		DC12~24V (Free voltage)
		K7M-DR20S/ DC	· 12 DC 12/24V Inputs · 8 Relay Outputs		
		K7M-DR30S/ DC	· 18 DC 12/24V Inputs · 12 Relay Outputs		
		K7M-DR40S/ DC	· 24 DC 12/24V Inputs · 16 Relay Outputs		
		K7M-DR60S/ DC	· 36 DC 12/24V Inputs · 24 Relay Outputs		
	Built-In functions	<ul style="list-style-type: none"> · Programming capacity : 7K steps · 1 High speed counter (16 KHz for 1 Phase, 8 KHz for 2 Phases) · 8 PID Loops with auto Tuning · 8 Pulse catch Inputs (Min. 0.2ms) · Discrete Inputs with filters (0~5ms, each 1ms) · 8 External Interrupt Inputs (0.4ms) · 1 RS-232C and 1 Loader port (Dedicated, userdefined, Modbus protocol available) 		*3	
Exp. Module	G7E-DR10A	· 6 DC 12/24V Inputs · 4 Relay Outputs			
	G7F-ADHA	· 2 Analog Inputs · 1 Analog Outputs			
	G7L-CUEC	· RS-422/485 Communication module			
	G7L-CUEB	· RS-232C Communication module (Modem available)			
	G7L-FUEA	· Fnet Master Module			
	G7F-AT2A	· Analog potentiometer, 4 points			
Exp. Pack	G7F-RTCA	· Real time clock pack			
	G7M-M256	· Flash memory pack for program back-up (256Kbytes)			

*1 1 Built-In High speed counter : 1 phase 8K pps
 *2 1 Built-In High speed counter : 1 phase 16K pps, 2 phases 8K pps
 *3 K7M-DR10S (/ DC), K7M-DT10S : built-in 1 RS-232C port and 1 RS-485 port available

K200S

Types	Part Numbers	Specification	Old part Nos.
CPU Modules	K3P-07AS	CPU Module, user program memory 7K steps, Max. 384 I/O, built-in RS-232C	K3P-07AS
	K3P-07BS	CPU Module, user program memory 7K steps, Max. 384 I/O, built-in RS-422/485, PID, RTC	K3P-07BS
	K3P-07CS	CPU Module, user program memory 7K steps, Max. 384 I/O, built-in RS-232C, PID, HSC, RTC	K3P-07CS
Power Modules	GM6-PAFA	Power supply module, AC 85~264V, DC 5V 2A, DC 24V 0.3A (For D I/O only)	K3S-302S
	GM6-PAFB	Power supply module, AC 85~264V, DC 5V 2A, DC -15V 0.3A (For AD/DA)	K3S-304S
	GM6-PDFA	Power supply module, AC 12~24V, DC 5V 2A (For D I/O only)	K3S-012S
	GM6-PDFB	Power supply module, AC 12~24V, DC 5V 3A, DC $\pm 15V$ 0.3A (For AD/DA)	K3S-014S
	GM6-PAFC	Power supply module, AC 85~132V, DC 5V 3.5A, DC 24V 0.3A (For 12 slot D I/O)	-
Base Board	GM6-B04M	Base board, 4 slots for I/O module	K3B-4MS
	GM6-B06M	Base board, 6 slots for I/O module	K3B-6MS
	GM6-B08M	Base board, 8 slots for I/O module	K3B-8MS
	GM6-B12M	Base board, 12 slots for I/O module	-
Input Modules	G6I-D21A	DC Input 8 points (current sink/source type)	K3X-110S
	G6I-D22A	DC Input 16 points (current sink/source type)	K3S-210S
	G6I-D24A	DC Input 32 points (current sink/source type)	K3X-310S
	G6I-A11A	AC 110V Input 8 points module	K3X-120S
	G6I-A21A	AC 220V Input 8 points module	K3X-130S
Output Modules	G6Q-RY1A	Relay Output 8 points (AC 240V, DC 24V 2A)	K3Y-101S
	G6Q-RY2A	Relay Output 16 points (AC 240V, DC 24V 2A)	K3Y-201S
	G6Q-TR2A	Tr. (NPN Type) Output 16 points (DC 12/24V 0.5A)	K3Y-203S
	G6Q-TR4A	Tr. (NPN Type) Output 32 points (DC 12/24V 0.1A)	K3Y-303S
	G6Q-TR2B	Tr. (PNP Type) Output 16 points (DC 12/24V 0.5A)	K3Y-204S
	G6Q-TR4B	Tr. (PNP Type) Output 32 points (DC 12/24V 0.1A)	K3Y-304S
	G6Q-SS1A	SSR (Current sink Type) Output 8 points (AC 100~240V 1A)	K3Y-102S
Special Modules	G6F-AD2A	Analog Input 4 channels, DC 1~5V, DC 0~10V, DC -10~+10V, DC 4~20mA	K3F-AD2A
	G6F-DA2V	Analog Output 4 channels, DC -10~+10V	K3F-AV2A
	G6F-DA2I	Analog Output 4 channels, DC 4~20mA	K3F-DI2A
	G6F-HSCA	High speed count module, 1 channel (Range : 0~16,777,215)	K3F-HSCA *1
	G6F-POPA	Position control module, 2 axis, Pulse Output, Max. 200Kpps	K3F-POPA *1
Link Modules	G6F-CUEB	Computer communication (RS-232C 1 channel)	K3F-CU2A
	G6F-CUEC	Computer communication (RS-422 1 channel)	K3F-CU4A
	G6L-FUEA	Fieldbus (Fnet) module, 1 Mbps (Mounted on I/O slot)	K3F-FUEA
	G6L-RBEA	Fieldbus (Fnet) module, 1 Mbps (Mounted on CPU slot)	-
	GOL-SMIA	Single Remote DC Input 16 points, Fieldbus (Fnet)	GOL-SMIA
	GOL-SMQA	Single Remote Relay Output 16 points, Fieldbus (Fnet)	GOLSMQA
	GOL-SMHA	Single Remote DC Input 8 points, Relay Output 8 points, Fieldbus (Fnet)	GOLSMHA
Dummy	G6F-DMMA	Dummy module for empty I/O slots	K3F-DMMA

*1 : Products which has been produced before July 01, 2000 is not applicable.

K300S

Types	Part Numbers	Specification	Old part Nos.
CPU Modules	K4P-15AS	CPU module, user program memory 15K steps, Max.512 I/O	K4P-15AS
Power Modules	GM4-PA1A	Power supply module, AC85~132V, DC 5V 4A, DC 24V 0.7A (Standard type)	K4S-122S
	GM4-PA2A	Power supply module, AC170~264V, DC 5V 4A, DC 24V 0.7A (Standard type)	K4S-132S
Base Board	GM4-B04M	Base board, 4 slots for I/O module	K4B-4MS
	GM4-B06M	Base board, 6 slots for I/O module	K4B-6MS
	GM4-B08M	Base board, 8 slots for I/O module	K4B-8MS
	GM4-B12M	Base board, 12 slots for I/O module	K4B-12MS
	GM4-BO4E	Base board (for expansion), 4 slots for I/O module	K4B-4ES
	GM4-BO6E	Base board (for expansion), 6 slots for I/O module	K4B-6ES
	GM4-BO8E	Base board (for expansion), 8 slots for I/O module	K4B-8ES
Memory Pack	G4M-M032	Memory pack for back-up, 32 K steps	G4MM032

K300S

Types	Part Numbers	Specification	Old part Nos.
Expansion Cables	G4C-E041	Expansion cable (0.4m) between Main and expansion base	G4C-E041
	G4C-E121	Expansion cable (1.2m) between Main and expansion base	G4C-E121
	G4C-E301	Expansion cable (3.0m) between Main and expansion base	G4C-E301
Input Modules	G4I-D22A	DC Input 16 points (current sink/source type)	K4X-210S
	G4I-D24A	DC Input 32 points (current sink/source type)	K4X-310S
	G4I-A12A	AC 110V Input 16 points	K4X-220S
	G4I-A22A	AC 220V Input 16 points	K4X-230S
Output Modules	G4Q-RY2A	Relay output 16 points (AC 240V, DC 24V 2A)	K4Y-201S
	G4Q-TR2A	Tr. (NPN type) Output 16 points (DC 12/24V 0.5A, surge killer included)	K4Y-203S
	G4Q-TR4A	Tr (NPN type) Output 32 points (DC 12/24V 0.1A, surge killer included)	K4Y-303S
	G4Q-TR2B	Tr (PNP type) Output 16 points (DC 12/24V 0.5A, surge killer included)	K4Y-204S
	G4Q-TR4B	Tr (PNP type) Output 32 points (DC 12/24V 0.1A, surge killer included)	K4Y-304S
	G4Q-SS2A	SSR (NPN type) Output 16 points (AC 100~240V 1A, surge killer included)	K4Y-202S
Special Modules	G4F-INTA	Interrupt Input 8 points	K4F-INTA
	G4F-AD2A	Analog Input 4 channels, DC $\pm 10V$, DC $\pm 20mA$	K4F-AD2A
	G4F-AD3A	Analog Input 8 channels, DC 1~5V, DC 4~20mA, DC 0~10V	K4FAD3A
	G4F-DA1A	Analog Output 2 channels, DC $\pm 10V$, DC 4~20mA	K4F-DA1A
	G4F-DA2V	Analog Output 4 channels, DC -10~+10V	K4F-DV2A
	G4F-DA2I	Analog Output 4 channels, DC 4~20mA	K4F-D12A
	G4F-DA3V	Analog Output 8 channels, DC -10~+10V	K4F-D3A
	G4F-DA3I	Analog Output 8 channels, DC 4~20mA	K4F-D13A
	G4F-RD2A	Thermocouple Input, 4 channels (Type : K, J, E, T ,B, R, S)	K4F-TC2A
	G4F-RD2A	Resistive temperature detectors, 4 channels, 3-wire (Range : -200 ~ 600°C)	K4F-RD2A
	G4F-AT3A	Analog timer, 8 points (on-delay operation)	K4F-AT3A
	G4F-PIDA	PID module, Max. 8 loops, forward/reverse conversion available	K4F-PIDA
	G4F-HSCA	High speed count module, 1 channel (range : 0~16, 777, 215)	K4f-HSCA *1
	G4F-POPB	Position control module, 2-axis, Pulse output, Max. 200Kpps	-
Link Modules	G4L-CUEA	Computer communication (RS-232C, RS-422/485 each 1 Channel)	K4F-CUEA
	G4L-FUEA	Fieldbus (Fnet) MASTER module, 1Mbps (mounted on I/O slot)	K4F-FUEA
	G4L-RBEA	Fieldbus (Fnet) remote module, 1Mbps (mounted on CPU slot)	K4R-BEA *1
	GOL-SMIA	Single Remote DC Input 16 points, fieldbus (Fnet)	GOL-SMIA
	GOL-SMQA	Single Remote Relay Output 16 points, fieldbus (Fnet)	GOL-SMQA
	GOL-SMHA	Single Remote DC Input 8 points, Relay Output 8 points, fieldbus (Fnet)	GOL-SMHA
Dummy	G4F-DMMA	Dummy module for empty I/O slots	K4F-DMMA

*1 : Products which has been produced before July 01, 2000 is not applicable.

Peripherals

Types	Part Numbers	Specification	Remarks
Loader	KLD-150S	Hanb-Held Programmer (Loader) for all MASTER-K series (KLC-15A cable included)	
Software	KGLWIN	Windows 95, 98 and NT based programming S/W for all MASTER-K series	
Cables	K1C-50A	Computer (KGLWIN)-PLC cable (K80S, 200S, 300S)	*1
	KLC-15A	KLD-150S-PLC cable (K80S, K200S, K300S)	
	KLC-010	KLD-150S-PLC cable (K10S1)	

*1 : Computer (KGLWIN)-K10S1 Connection : KLC-010+KLA-009

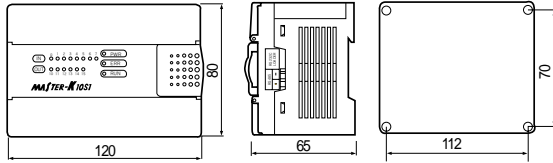
PMU

Types	Part Numbers	Specification	Remarks
Basic	PMU-200BN	LCD Mono. blue Type, 4.25" (240×128 Dots), function key only available	*1
	PMU-300BT	LCD Mono. blue Type, 5.7" (320×240 Dots), function key and screen touch key available	
	PMU-600TT	TFT Color LCD, 10.4" (640×480 Dots), function key and screen touch key available	
Link Modules	PMO-200S	Optimal serial communication module for PMU-200BN, RS-232C / RS-485 (422)	
	PMO-300S	Optimal serial communication module for PMU-300BT, RS-232C / RS-485 (422)	
	PMO-600S	Optimal serial communication module for PMU-600TT, RS-232C / RS-485 (422)	
	PMO-600F	Optimal serial communication module for PMU-600TT, 1 Mbps, Max. 750M	
Software	PMU-MASTER	Programming software for PMU series	

*1 : PMU-200BN has 1 built-in RS-232C port

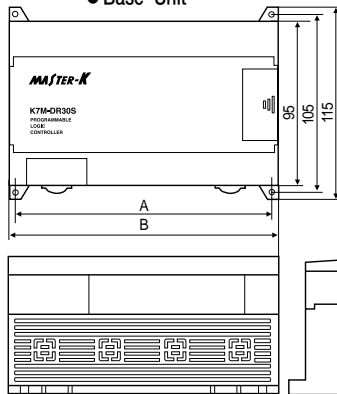
Dimensions

K10S1

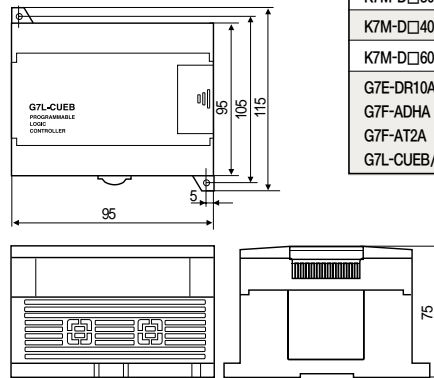


K80S

● Base Unit

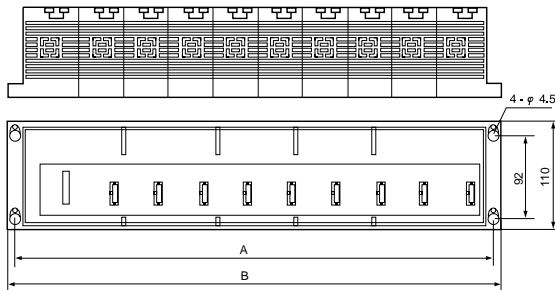


● Expansion Module



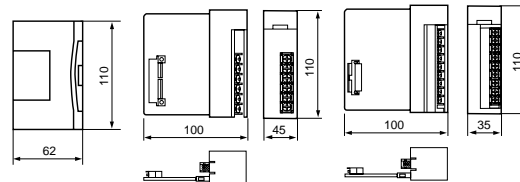
	A	B
K7M-D□10S	85	95
K7M-D□20S	135	145
K7M-D□30S	135	145
K7M-D□40S	165	175
K7M-D□60S	215	225
G7E-DR10A		
G7F-ADHA	85	95
G7F-AT2A		
G7L-CUEB/C		

K200S



● Power Module

● CPU or I/O Module

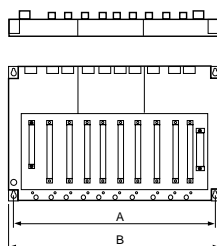


● Base

	Base board			
	GM6-B04M	GM6-B06M	GM6-B08M	GM-B12M
A	230.5	300.5	370.5	510.5
B	244	314	384	524

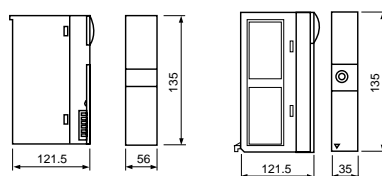
K300S

● Base



● Power Module

● CPU or I/O Module



● Base Dimension

	Base board				Expansion Base		
	GM4-B04M	GM4-B06M	GM4-B08M	GM4-B12M	GM4-B04E	GM4-B06M	GM4-B08E
A	280	350	424	524	284	354	424
B	297	367	437	540	297	367	437



LG Industrial Systems

■ HEAD OFFICE

LG TWIN TOWERS, 20 Yoido-dong, Youngdungpo-gu,
Seoul, 150-721, Korea

Tel. (82-2)3777-4640 ~ 4649

Fax. (82-2)3777-4648

<http://www.lgis.com>

<http://www.fasolution.com>

Global network

■ Dalian LG Industrial Systems Co.,Ltd China

- Address : No. 15 Liaohexi 3 Road, economic and technical development zone, Dalian, China
- Tel : 86-411-731-8210 ● Fax : 86-411-730-7560
- e-mail : lgisppm@mail.dlptt.ln.cn

■ LG-VINA Industrial Systems Co.,Ltd Vietnam

- Address : LGIS VINA Congty che tao may dien Viet-Hung Dong Anh Hanoi, Vietnam
- Tel : 84-4-882-0222 ● Fax : 84-4-882-0220
- e-mail : lgis-youn@hn.vnn.vn

■ LG Industrial Trading (Shanghai) Co.,Ltd China

- Address : Room1705-1707, 17th Floor Xinda Commerical Building No 318, Xian Xia Road Shanahai
- Tel : 86-21-6252-4291 ● Fax : 86-21-6278-4372
- e-mail : jkkimb@lgis.com

■ LG Industrial Systems Beijing Office China

- Address : 6F North B/D, EAS 21 XIAO YUN ROAD, Dong San Huan Bei Road, Chao Yang District, Beijing, China
- Tel : 86-10-6462-3259/4 ● Fax : 86-10-6462-3236
- e-mail : sclim@mx.cei.gov.cn

■ LG Industrial Systems Shanghai Office China

- Address : Room1705-1707, 17th Floor Xinda Commerical Building No 318, Xian Xia Road Shanahai, China
- Tel : 86-21-6278-4370 ● Fax : 86-21-6278-4301
- e-mail : ijkim1005@hanmail.net

■ LG Industrial Systems Guangzhou Office China

- Address : Room 303, 3F, Zheng Sheng Building, No 5-6, Tian He Bei Road, Guangzhou, China
- Tel : 86-20-8755-3410 ● Fax : 86-20-8755-3408
- e-mail : lgisgz@public1.guangzhou.gd.cn

■ LG Industrial Systems New Jersey Office USA

- Address : 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632 USA
- Tel : 1-201-816-2985 ● Fax : 1-201-816-2343
- e-mail : hskim@lgisusa.com

■ LG Industrial Systems Tokyo Office Japan

- Address : 16F, Higashi-Kan, Akasaka Twin Towers 17-22, 2-chome, Akasaka, Minato-ku Tokyo 107-0052, Japan
- Tel : 81-3-3582-9126 ● Fax : 81-3-3582-0062
- e-mail : snbaek@partner.lgis.co.jp

LG constantly endeavor to improve our products so that information in this catalog is subject to change without notice.