

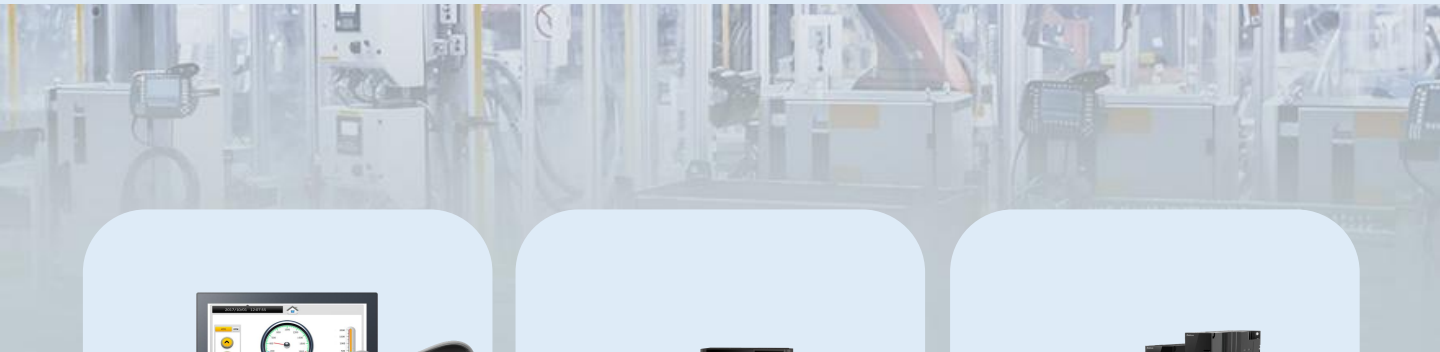
## PLC Product Selection Guide





## About Samkoon Technology

Focus on the R&D and manufacturing of automation products, and provide complete solutions for Industry 4.0



### Human Machine Interface

- SK Series
- EA Serie



### Control Unit

- FAs Series PLC
- FAT Series PLC
- FGR Series MINI PLC
- PRO, MAX Series Bus PLC
- FGs Series Standard PLC
- FGm Series Motion Controller PLC
- GT Series All-in-one



### Drive Element

- R8 Series Servo Driver
- HK Series Servo Motor



## Company Introduction

# 企业简介

Quality

Professional

Efficiency

Performance

Shenzhen Samkoon Technology Co., Ltd. (referred to as "Samkoon Technology") was established in March 2007. It is a national high-tech enterprise, a dual-soft enterprise, a "specialized, refined, and new" small and medium-sized enterprise in Shenzhen. The R&D center is located at the High-tech Park, Nanshan District, Shenzhen; and the production base is located at the Fashion Brand Industrial Park of the Shenzhen-Shantou Special Cooperation Zone.

Samkoon Technology has been deeply involved in the field of industrial automation for more than ten years, focusing on the research and development, production and sales of technology and products in the fields of industrial human-machine interface (HMI), programmable logic controller (PLC), servo drives, motion controllers and robots. All software and hardware of products have 100% independent intellectual property rights. At present, Samkoon Technology has accumulatively obtained 72 national patents, including 16 invention patents, 31 software copyrights, 24 utility model patents, and 1 design patent.

显控科技





**2007**

Samkoon founded and released 260000 true color LCD HMI series products

**2009**

Honored as "Industrial, Control Research Demonstration Base" by National Sciences and Technology regulatory Commission

**2011**

Awarded as "National High-tech Enterprise"



**2012**

Succeeded in the development of Samkoon PLC, and released compiled PLC after three years, which increases 10 times of scanning speed periodically



**2017**

Cooperated with HUST and built research base for postgraduates



**2017**

Held new product launch in Shenzhen Xilihu Conference Center to announce the dominance of having four core technologies of industrial control



**2018**

Signed cooperative agreement with THU and formally became the practice base for PhD students in automation



**2019**

Built 20000m<sup>2</sup> production plant in Shenzhen-Shanwei cooperation zone, speeding up in industrialization and standardization



**2021**

Samkoon Technology was elected as the governing unit of Shenzhen Advanced Manufacturing Federation



**2022**

Samkoon Technology has been recognized by Shenzhen "specialized, refined and new" small and medium-sized enterprises





## Samkoon industrial automation & digital comprehensive solution

**Industry solutions:**



Intelligent Manufacturing    Intelligent Vehicle    Intelligent Environmental Protection    Smart Energy    Smart Medical Care    Smart Agriculture    .....

**Samkoon Cloud:**



Industrial IoT    Digital Factory    Equipment Operation    Data Empowerment    Data Visualization

**Human-computer interaction layer:**



Waterproof HMI    HD HMI    IoT HMI    Handheld HMI    SK Series HMI    EA Series HMI    Network module

**Control layer:**




FAs Series PLC    FAT Series PLC    All-in-one (HMI+PLC)    PRO series Bus PLC    FGR Series MINI PLC    FGs Series Standard PLC

**Driver layer:**



R8 Series Servo Driver (Ethercat bus type)    R8 Series Servo Driver (Pulse type)

**Execution/Sensor:**



HK Series Motors    Industrial Robots    Temperature Sensors    Encoders    Solenoid Valves    Temperature Control Meters





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## Samkoon PLC Introduction

Samkoon PLC includes FAT series PLC, FAs series PLC, FGR series MINI type PLC, FGs series basic type PLC, PRO and MAX series bus type PLC, GT series all-in-one machine. The product has powerful functions and abundant models. With independent intellectual property rights and rich engineering experience accumulated by the R&D team, Samkoon PLCs can be customized to meet specific scenarios according to the diversified needs of users and the characteristics of specific automation processes.

### FAT Series PLC:



### FAs Series PLC:



### FGR Series MINI PLC:



### FGs Series Standard PLC:



### PRO Series Bus PLC:



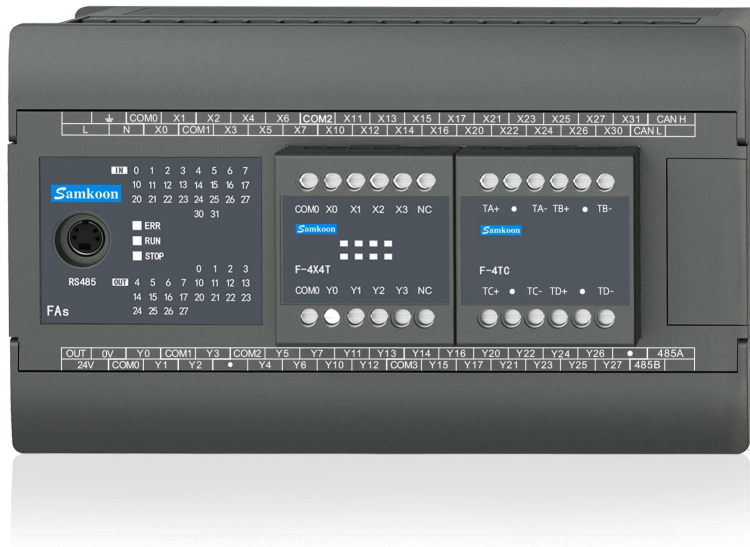
### GT Series All-in-one (HMI+PLC) :



## FAs Series PLC





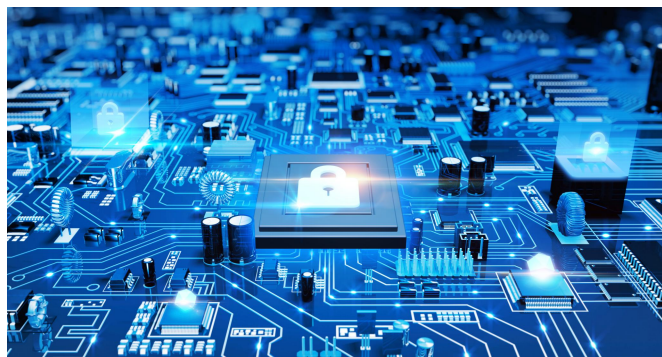


FAs series PLC is a new generation of PLC launched by Samkoon Technology after years of research, combined with years of practical experience in PLC projects and digging deeply into industry needs.

## Product Features

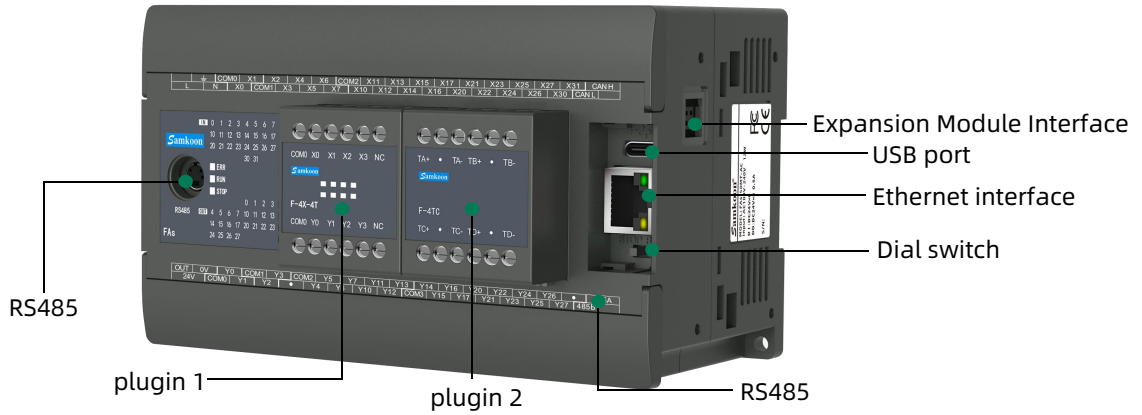
### Powerful hardware and software configuration

- The hardware is based on the 32-bit micro-controller with Arm® Cortex®-M4 core, 200MHz main frequency, enhanced hardware anti-interference, stable response to grid power fluctuations, and ensuring continuous and efficient operation of the machine.
- Compiled underlying software guarantees a very short scan cycle, and its execution speed is more than 10 times that of interpreted PLC with the same configuration.



### Abundant communication interface

- Ethernet interface, support Modbus TCP/IP protocol
- RS485 communication port, support Modbus RTU and free communication protocol
- 1 full speed USB download port
- Download, monitor and debug PLC from any communication port



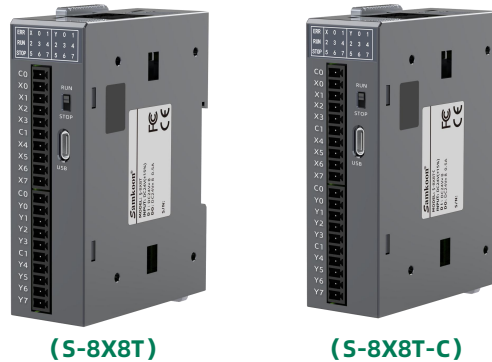
### Flexible and comprehensive performance

- Ethernet host supports 4-way high-speed pulse output, 4-way high-speed counting input, with powerful motion control function.
- Powerful instruction function
- Based on the right expansion module of CAN communication, the maximum communication rate can reach 1Mbps, and 64 expansion modules can be expanded.



Supports up to **64** expansion modules

- The expansion module can be used as an independent control unit to run the program



- The front supports 2 small plug-in expansion modules, which can be combined with digital IO modules, analog modules, and temperature modules arbitrarily



### The upgraded host software SamSoar2022

- Compile speed < 0.5 seconds, download speed < 3 seconds, and allow online editing of programs
- SamSoar2022 supports instruction list, function block diagram, SFC step ladder diagram programming, user UI is highly customized, contains rich PLC instructions, and function blocks can be written in C language
- The software adopts a compiled architecture to ensure that it cannot be decoded and the program cannot be cracked
- The software has rich compatibility with competing products, and can directly convert ladder diagram programs of the same category into display and control ladder diagrams
- PLC program can be downloaded through the display and control screen



(SamSoar2022)

Naming rules



①FAs: FAs series PLC

④A: AC Power type

- ②16: input/output in total 16
- 20: input/output in total 20
- 22: input/output in total 22
- 32: input/output in total 32
- 40: input/output in total 40
- 50: input/output in total 50
- 66: input/output in total 66

⑤C: compiled type

③ MR: elementary unit relay output  
MT/HT: elementary Transistor output



Product specifications

Model		FAs-66MT-AC	FAs-50MT-AC	FAs-32MT-AC
Structure and environment	Size (mm)	194x97x81	163× 97 × 81	125 × 97 × 81
	Weight (g)	690	580	500
	Working environment temperature	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)
	Working environment humidity	5~95%RH(non-condensing)	5~95%RH(non-condensing)	5~95%RH(non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V
Input parameter	High-speed counter	4 single-phase (X0, X2, X4, X6) 200kHz	4 single-phase (X0, X2, X4, X6) 200kHz	2 single-phase (X0, X2) 200kHz
	AB phase counter	4 AB phase count (X0X1, X2X3, X4X5, X6X7) 200kHz	4 AB phase count (X0X1, X2X3, X4X5, X6X7) 200kHz	2 AB phase count (X0X1, X2X3) 200kHz
	Digital input	34	26	16
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring		
	Input signal voltage	DC24V±20%	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	12VA	12VA	12VA
	Maximum resistance load	single point 0.5A, total point 2A	single point 0.5A, total point 2A	single point 0.5A, total point 2A
	Pulse output	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively
	Digital output	32	24	16
	Output Type	ransistor/NPN	ransistor/NPN	ransistor/NPN
	The output voltage	24V	24V	24V
Interface	RS485	2	2	2
	USB port	Support upload and download, online monitoring	Support upload and download, online monitoring	Support upload and download, online monitoring
	Ethernet interface	YES	YES	YES
	Front expansion slot	2	2	1
	Right expansion module	Supports up to 64 expansion modules	Supports up to 64 expansion modules	Supports up to 64 expansion modules
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30	IP30
	Software	SamSoar2022	SamSoar2022	SamSoar2022

Product specifications

Model		FAs-16MT-AC	FAs-22HT-AC	FAs-40HT-AC
Structure and environment	Size (mm)	70 × 97 × 81	86 × 97 × 81	125 × 97 × 81
	Weight (g)	305	345	480
	Working environment temperature	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)
	Working environment humidity	5~95%RH(non-condensing)	5~95%RH(non-condensing)	5~95%RH(non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V
Input parameter	High-speed counter	2 single-phase(X0, X1)200kHz	2 single-phase(X0, X2) 100kHz	2 single-phase(X0, X2) 100kHz
	AB phase counter	1AB phase count (X0X1) 100kHz	2AB phase count (X0X1, X2X3) 100kHz	2AB phase count (X0X1, X2X3)100kHz
	Digital input	8	12	22
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring		
	input signal voltage	DC24V±20%	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	12VA	12VA	12VA
	Maximum resistance load	single point 0.5A, total point 2A	single point 0.5A, total point 2A	single point 0.5A, total point 2A
	Pulse output	2 channels up to 200KHz respectively	4 channels up to 100KHz respectively	4 channels up to 100KHz respectively
	digital output	8	10	18
	Output Type	ransistor/NPN	ransistor/NPN	ransistor/NPN
	The output voltage	24V	24V	24V
Interface	RS485	1	2	2
	USB port	Support upload and download, online monitoring	Support upload and download, online monitoring	Support upload and download, online monitoring
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30	IP30
	Software	SamSoar2022	SamSoar2022	SamSoar2022

Product specifications

Model		FAs-20MR-AC	FAs-20MT-AC	FAs-40MR-AC	FAs-40MT-AC
Structure and environment	Size (mm)	86 × 97 × 81	86 × 97 × 81	125 × 97 × 81	125 × 97 × 81
	weight (g)	465	465	525	525
	Working environment temperature	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)	-20°C~55°C(no freezing)
	Working environment humidity	5~95%RH (non-condensing)	5~95%RH (non-condensing)	5~95%RH (non-condensing)	5~95%RH (non-condensing)
	Shock resistance	0 ~ 25HZ (XYZ direction 2G/30 minutes)	0 ~ 25HZ (XYZ direction 2G/30 minutes)	0 ~ 25HZ (XYZ direction 2G/30 minutes)	0 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	power consumption (w)	3.2	2.6	5	4.2
	Power supply voltage	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V
Input parameter	High-speed counter	High-speed counting 2 channels up to 200KHz respectively	High-speed counting 2 channels up to 200KHz respectively	High-speed counting 2 channels up to 200KHz respectively	High-speed counting 2 channels up to 200KHz respectively
	AB phase counter	AB phase count 1 channel up to 200KHz	AB phase count 1 channel up to 200KHz	AB phase count 1 channel up to 200KHz	AB phase count 1 channel up to 200KHz
	Digital input	12	12	22	22
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring			
	Input signal voltage	DC24V±20%	DC24V±20%	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	80VA	12VA	80VA	12VA
	Maximum resistance load	single point 2A, total point 4A	single point 0.5A, total point 2A	single point 2A, total point 4A	single point 0.5A, total point 2A
	Pulse output		Pulse output 2 channels up to 200KHz respectively		Pulse output 2 channels up to 200KHz respectively
	digital output	8	8	18	18
	Output Type	relay	ransistor/NPN	relay	ransistor/NPN
	The output voltage	24V	24V	24V	24V
Interface	RS485	2	2	2	2
	USB port	Support upload and download, online monitoring	Support upload and download, online monitoring	Support upload and download, online monitoring	Support upload and download, online monitoring
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30	IP30	IP30
	Software	SamSoar2022	SamSoar2022	SamSoar2022	SamSoar2022

## FAT Series PLC



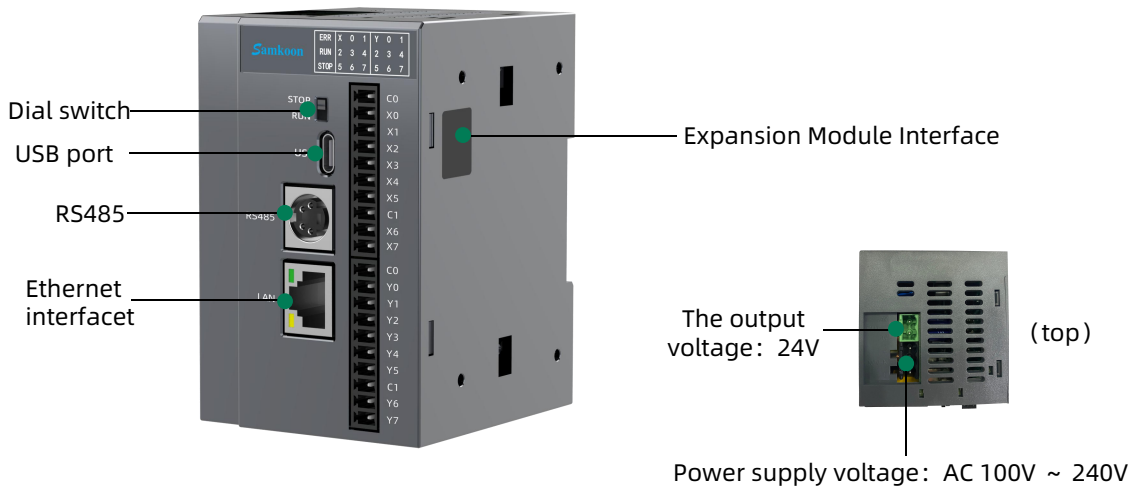




### Product Features

- Ethernet host supports 4-way high-speed pulse output, 4-way high-speed counting input, with powerful motion control function
- Based on the right expansion module of CAN communication, the maximum communication rate can reach 1Mbps, and 64 expansion modules can be expanded
- Fast speed (compiled architecture executing the native code directly, more than 10 times faster than interpreted architecture)
- Fine security (upload, download, monitor the password, upload forbidden, file code, subprogram password, Function performance block code)
- Abundant communication interface (ethernet interface, support Modbus TCP/IP protocol; RS485 communication port, support Modbus RTU and free communication protocol; 1 full speed USB download port)

### Port Introduction



Product specifications

Model		FAT-16MT-AC
Structure and environment	Size (mm)	64×97×72
	Weight (g)	239
	Working environment temperature	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	AC 100V ~ 240V
Input parameter	High-speed counter	4 single-phase(X0, X2, X4, X6) 200kHz
	AB phase counter	4 AB phase count(X0X1, X2X3, X4X5, X6X7) 200kHz
	Digital input	8
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring
	Input signal voltage	DC24V±20%
Output parameters	Maximum inductive load	12VA
	Maximum resistance load	single point 0.5A, total point 2A
	Pulse output	4 channels up to 200KHz respectively
	Digital output	8
	Output Type	ransistor/NPN
	The output voltage	24V
Interface	RS485	1
	USB port	Support upload and download, online monitoring
	Ethernet interface	YES
	Right expansion module	Supports up to 64 expansion modules
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards
	Protection class	IP30
	Software	SamSoar2022

## Product specifications

Model		S-8X8T	S-8X8T-C
Structure and environment	Size (mm)	30x97x72	30x97x72
	Weight (g)	109	109
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	24V	24V
Input parameter	High-speed counter	2 single-phase(X0、X2) 200kHz	2 single-phase(X0、X2) 200kHz
	AB phase counter	2 AB phase count (X0X1、X2X3) 200kHz	2 AB phase count (X0X1、X2X3) 200kHz
	Digital input	8	8
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring	
	Input signal voltage	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	12VA	12VA
	Maximum resistance load	single point 0.5A, total point 2A	single point 0.5A, total point 2A
	Pulse output	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively
	Digital output	8	8
	Output Type	ransistor/NPN	ransistor/NPN
	The output voltage	24V	24V
Interface	RS485	1	NO
	Can interface	NO	1
	USB port	Support upload and download, online monitoring	Support upload and download, online monitoring
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30
	Software	SamSoar2022	SamSoar2022

## Product specifications

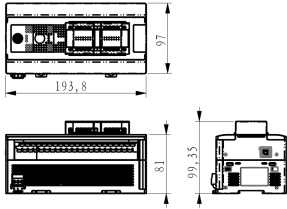
Mode		F-4X4T	F-8X	F-8T
Structure and environment	Size (mm)	39x46x33	39x46x33	39x46x33
	weight (g)	38	38	38
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	Host Power	Host Power	Host Power
Input parameter	Digital input	4	8	
	input signal voltage	DC24V±20%	DC24V±20%	
Output parameters	Maximum inductive load	12VA		12VA
	Maximum resistance load	single point 0.3A, total point 1A		
	Digital output	4		8
	Output Type	ransistor/NPN		ransistor/NPN
	The output voltag	24V		24V
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30	IP30
	Software	SamSoar2022	SamSoar2022	SamSoar2022



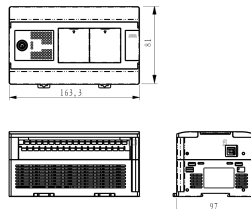
Product specifications

Mode		F-4TC	F-4AD	F-4PT
Structure and environment	Size (mm)	39x46x33	39x46x33	39x46x33
	weight (g)	38	38	38
	Working environment temperature	-20°C~55°C (no freezing))	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power supply voltage	Power supply voltage	Power supply voltage	Power supply voltage
Input parameter	Analog input	4	4	4
	Input model	K type,Y type thermal resistance couple	Voltage/current measurement	Electric resistance PT100
	Measuring range	K type (-50°C~500°C), Y type thermal resistance couple(-260°C-400°C)	0~5V , 0~10V, 4~20mA	-200°C-500°C
	Maximum input range		12V, 30mA	
	Maximum resolution	0.1°C	0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA	0.1°C
	Digital to analog conversion accuracy	16 bit	16 bit	16 bit
	overall measurement accuracy	±0.5°C	±5‰	±0.5°C
Output parameters	Analog output			
	Output model			
	Output range			
	Maximum resolution			
	Output accuracy			
	Output load impedance			
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A	Compatibility Complies with FCC, Class A
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP30	IP30	IP30
	Software	SamSoar2022	SamSoar2022	SamSoar2022

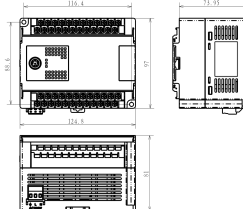
Product Size



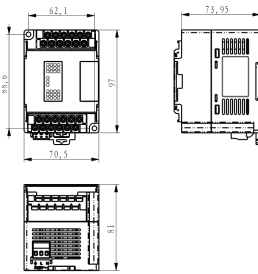
FAs-66MT-AC



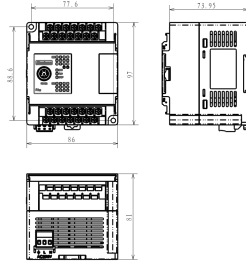
FAs-50MT-AC



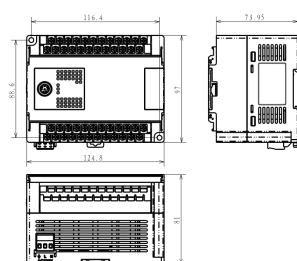
FAs-32MT-AC



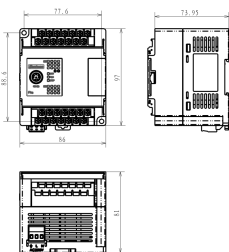
FAs-16MT-AC



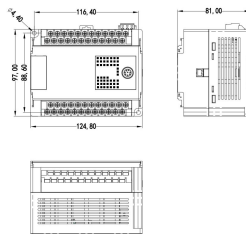
FAs-22HT-AC



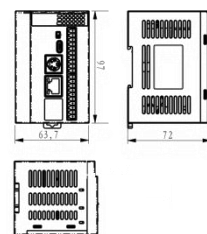
FAs-40HT-AC



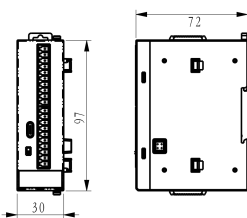
FAs-20MR-AC/FAs-20MT-AC



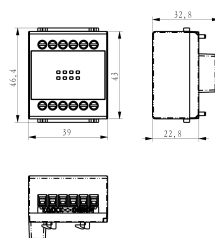
FAs-40MR-AC/FAs-40MT-AC



FAT-16MT-AC



S-8X8T/S-8X8T-C



F-4X4T/F-8X/F-8T/F-4TC/F-4AD/F-4PT



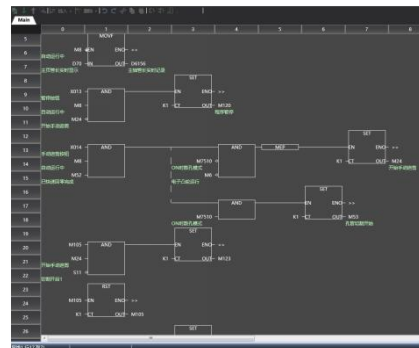
SamSoar 2022 is a PLC programming software launched by Samkoon Technology based on more than 10 years of experience in industrial automation information technology and user needs and oriented to improve engineers' programming efficiency. The software features fast download and compilation; supports online editing of programs; supports writing function blocks in C language; supports UI style customization, etc.

Full command set coverage of foreign counterparts

- 程序控制
  - 位移
    - SHL 向左移位
    - SHLD 双字向左移位
    - SHR 向右移位
    - SHRD 双字向右移位
    - ROL 循环向左移位
    - ROLD 双字循环向左移位
    - ROR 循环向右移位
    - RORD 双字循环向右移位
    - SHLB 位左移
    - SHRB 位右移
    - RCL 带进位循环向左移位
    - RCLD 双字带进位循环向左移位
    - RCR 带进位循环向右移位
    - RCRD 双字带进位循环向右移位
    - SFT
  - 中断
  - 实时时钟
  - 通信
  - 脉冲
  - 高速计数
  - PID控制
  - 数据控制
    - LIMIT 单字上下限限位控制
    - LIMITD 双字上下限限位控制
    - LIMITF 浮点上下限限位控制
    - BAND 单字死区控制
    - BANDD 双字死区控制
    - BANFD 双字死区控制
    - ZONE 单字区域控制
    - ZONED 双字区域控制
    - ZONEF 浮点区域控制
    - SCL 单字定坐标
    - SCLD 双字定坐标
    - SCLF 浮点定坐标
    - SCL2 单字定坐标2
    - SCL2D 双字定坐标2
    - SCL2F 浮点定坐标2
  - 字符串
    - S1 字符串转单字
    - S DI 字符串转双字
    - S R 字符串转浮点
    - I S 单字转字符串
    - DI S 双字转字符串
    - R S 浮点转字符串

- LDD <> 双字不等
  - LDD >= 双字大于等于
  - LDD <= 双字小于等于
  - LDD > 双字大于
  - LDD < 双字小于
  - LDF = 浮点相等
  - LDF <> 浮点不等
  - LDF >= 浮点大于等于
  - LDF <= 浮点小于等于
  - LDF > 浮点大于
  - LDF < 浮点小于
  - CMP 单字比较
  - CMPD 双字比较
  - CMPF 浮点比较
  - ZCP 单字区间比较
  - ZCPD 双字区间比较
  - ZCPF 浮点区间比较
- 转换
  - WTOD 单字转双字
  - DTOW 双字转单字
  - DTOF 双字转浮点
  - BIN BCD码转单字
  - BCD 单字转BCD码
  - ROUND 四舍五入
  - TRUNC 截位取整
  - WTOF 单字转浮点
  - FTOW 浮点转单字
  - DECO 解码
  - ENCO 编码
  - GRY 单字转格雷码
  - GRVD 双字转格雷码
  - GBIN 格雷码转单字
  - GBIND 格雷码转双字
  - BCDD 双字转BCD码
  - BIND BCD码转双字
- 逻辑运算
  - INVV 反转单字
  - INVD 反转双字
  - ANDW 单字与
  - ANDD 双字与
  - ORW 单字或
  - ORD 双字或
  - XORW 单字异或
  - XORD 双字异或
  - NEG 单字正负切换
  - NEGD 双字正负切换
  - XNRW 单字异或反
  - XNRD 双字异或反

Function block diagrams, ladder diagrams, instruction tables, sequential function diagrams, arbitrary mode programming



步序	指令	操作数	注释
0	POP		
1	LDI	PLC_A05	启动按钮
2	ANDI	PLC_A06	停止按钮
3	LD	PLC_A07	启动按钮
4	OR	PLC_A08	启动按钮
5	ANDI	PLC_A09	启动按钮
6	LD	PLC_A10	启动按钮
7	ANDI	PLC_A11	启动按钮
8	LD	PLC_A12	启动按钮
9	ANDI	PLC_A13	启动按钮
10	LD	PLC_A14	启动按钮
11	ANDI	PLC_A15	启动按钮
12	LD	PLC_A16	启动按钮
13	ANDI	PLC_A17	启动按钮
14	LD	PLC_A18	启动按钮
15	ANDI	PLC_A19	启动按钮
16	LD	PLC_A20	启动按钮
17	ANDI	PLC_A21	启动按钮
18	LD	PLC_A22	启动按钮
19	ANDI	PLC_A23	启动按钮
20	LD	PLC_A24	启动按钮
21	ANDI	PLC_A25	启动按钮
22	LD	PLC_A26	启动按钮
23	ANDI	PLC_A27	启动按钮
24	LD	PLC_A28	启动按钮
25	ANDI	PLC_A29	启动按钮
26	LD	PLC_A30	启动按钮
27	ANDI	PLC_A31	启动按钮
28	LD	PLC_A32	启动按钮
29	ANDI	PLC_A33	启动按钮
30	LD	PLC_A34	启动按钮
31	ANDI	PLC_A35	启动按钮
32	CALL	D:0002 R:0002	启动按钮
33	MOV	PLC_A36	启动按钮

Support writing function blocks in C language

```
void setCamPara(WORD D)
{
    float L2 = *(float *)&DWord(6014) + *(float *)&DWord(6010); //设置初始长度
    float L3, L5;
    if (MBit(65) == 1) {
        *(float *)&DWord(6014) = L2 / 2;
        *(float *)&DWord(6016) = *(float *)&DWord(6014) * 0.5;
        MBit(65) = 0;
    }
    L3 = *(float *)&DWord(5086); //设置初始速度
    L5 = *(float *)&DWord(6016); //设置初始长度
    *(float *)&DWord(6012) = L3 - 8;

    float L4 = *(float *)&DWord(6012); //用冲区长度

    float S1; //设置初始位置
    float S2; //设置初始速度
    float S5; //设置初始速度
    float S6; //设置初始速度

    S1 = 2 * L3 - L4;
    S2 = L2 + L4 - 2 * L3;
    S5 = L3 - L4;
    S6 = L3;

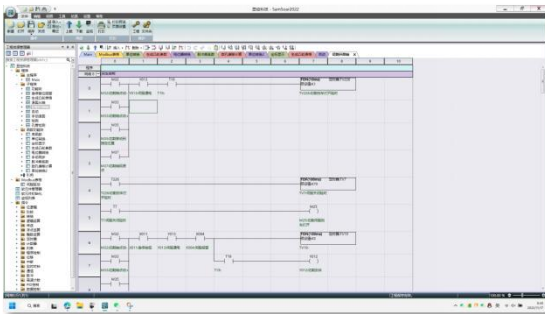
    *(float *)&D + 2) = 0;
    *(float *)&D + 4) = 0;
}
```

Fast download speed

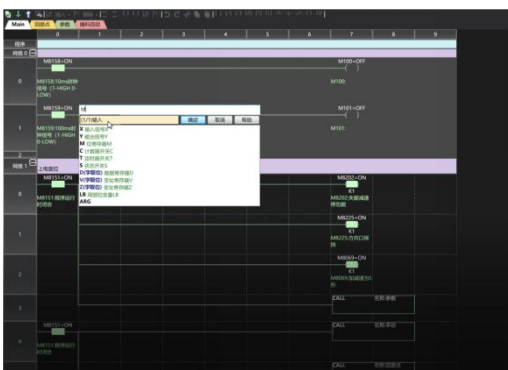


Less than **10%** of the original time, online downloads take less than **3 seconds**

UI style customization



Online editing process



## PRO、MAX Series Bus PLC



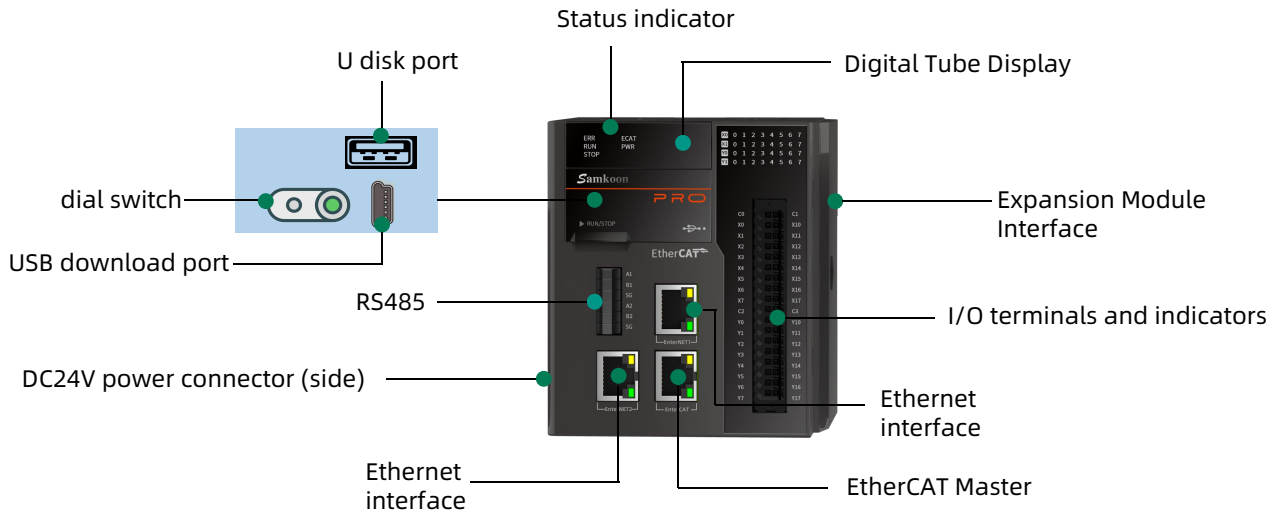




Product specifications

Model		PRO Series	MAX Series
Core part	CPU	1GHz frequency + large-scale FPGA logic	
	Linux	Operating System Linux Multitasking	
	RAM space	512MBytes	
	FLASH space	4GBytes eMMC	
	Power-down storage space	Full register area power-down retention	
Interface part	EtherCAT	1x, EtherCAT master, max. 32 axe	
	Ethernet	2 channels, Modbus TCP protocol, network port download and monitoring	
	RS485	2 channels, 1200-115200bps, Modbus protocol/Freeport protocol	
	U disk	1 channel, download program and firmware	
	USB	1 channel, USB download and monitoring	
	IO	16 high-speed inputs and 16 high-speed outputs, supporting up to 8 local axes with 200KHz high-speed pulses	
PLC section	Ladderdiagram instructions	Support logic, operation, communication and other instructions	
	MC single-axis command	Support single-axis point, variable speed and variable position control	
	MC interpolation instruction	Support 8-channel 4-axis linear and circular interpolation, with a forward-looking cache segment of 2000 segments	
	Electroniccam command	Support chasing shears, flying shears, electronic cam table	
Motion section	Number of interpolation axes	—	Support 8-channel 9-axis G-code interpolation
	G code function		Advanced G-code languages supporting macro B
	Interpolation curve	—	Spatial straight lines, spatial circular arcs, spirals, spline curves, NURBS curve interpolation
	Continuous interpolation	—	Forward buffered 2000 segments with G64 continuous small line segment interpolation support
	File function	—	Support downloading G-code files on software and files on U-disk
	Variable speed function	—	Real-time speed change, multiplier setting, automatic pause, emergency stop, etc. during movement
	Debugging function	—	Support G-code 3D trajectory offline and online simulation function, support CAD, text, picture import to generate G-code function
Power supply	Power consumption	10W	
	Power supply	DC24V±15%	
Structure and environment	size	92.5mm X 105mm X 98mm	
	Working temperature	0°~50° (no freezing)	
	Working environment humidity	5~95% RH (non-condensing)	
	Shock resistance	10~25Hz (XYZ direction, 2G/30 minutes)	
	vibration level	Class 3 ±6kV	

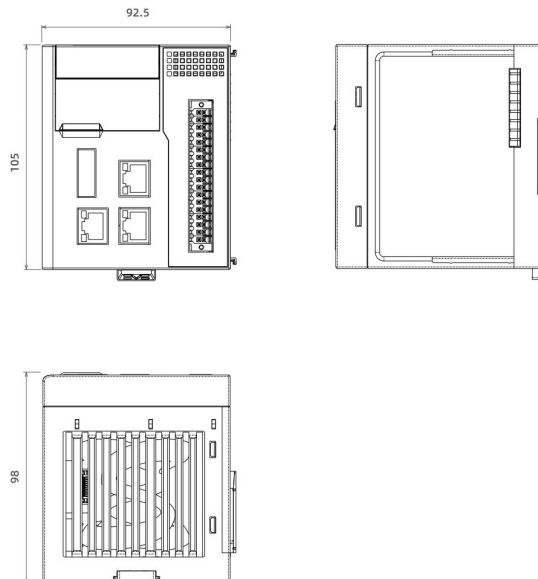
Port description



Product Size

92.5x 105x 98 (mm)

(單位: mm)





Model	PRO-E-16X16T
Input and output channels	16 inputs and 16 outputs
rated voltage	24V DC ( $\pm 15\%$ )
Power consumption	1W
Input "1" level range	8~30V DC
Input and output rates	10KHz
Output load current	0.6A per channel
Isolation withstand voltage	500V
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 $\pm 6$ kV

Model	PRO-E-16X
Input channels	16 inputs
rated voltage	24V DC ( $\pm 15\%$ )
Power consumption	1W
Input "1" level range	8~30V DC
Input rates	10KHz
Isolation withstand voltage	500V
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 $\pm 6$ kV

Model	PRO-E-16T
output channels	16 outputs
rated voltage	24V DC (±15%)
Power consumption	1W
output rates	10KHz
Output load current	0.6A per channel
Isolation withstand voltage	500V
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-8X8T
Input and output channels	8 inputs and 8 outputs
rated voltage	24V DC (±15%)
Power consumption	1W
Input "1" level range	13~30V DC
Input and output rates	200KHz
Output load current	0.6A per channel
Isolation withstand voltage	500V
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-START
Rated voltage	24V DC (±15%)
Power consumption	1W
Product Size	105mm×98mm×29mm
Number of accessible expansion modules	5
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-END
Rated voltage	24V DC (±15%)
Power consumption	1W
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-4AI
Input channels	4 analog inputs
Rated voltage	24V DC (±15%)
Power consumption	2W
Input Current	0~20mA
Input s voltage	±10V、±5V
Current input impedance	250Ω
Voltage input impedance	>500kΩ
Resolution / Accuracy	16位/±0.2%
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-4AO
Output channels	4 analog outputs
Rated voltage	24V DC (±15%)
Power consumption	2W
Output current	0~20mA
Output current load impedance	<500Ω
Output voltage	±10V、±5V
Output voltage load impedance	>5kΩ
Resolution / Accuracy	12位/±0.2%
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

Model	PRO-E-4PT
Input channels	4 channels
Rated voltage	24V DC (±15%)
Power consumption	2W
Sensor type	P-type thermocouple K-type thermocouple PT100
Temperature range	Depends on sensor measurement range
Resolution / Accuracy	24位/±0.2%
Product Size	105mm×98mm×29mm
Working temperature	0~55°C
Static level	Class 3 ±6kV

## Naming rules

PRO  
①
-
C  
②
-
16X16T  
③
A  
④

① PRO: PRO series PLC  
MAX: MAX series PLC

④A: the version number

② C: Indicates the host CPU module  
E: Indicates Expansion Module

③ 16X16T: 16 inputs and 16 outputs  
 16X: 16 inputs  
 16T: 16 outputs  
 8X8T: 8 inputs and 8 outputs  
 8E8T: Indicates 8-way encoder, 8-way output:  
 START: Indicates the start of the network expansion module  
 END: Indicates the end of the network expansion module  
 4AI: Indicates 4 analog inputs  
 4AO: Indicates 4 analog outputs  
 4PT: Indicates 4-way temperature measurement

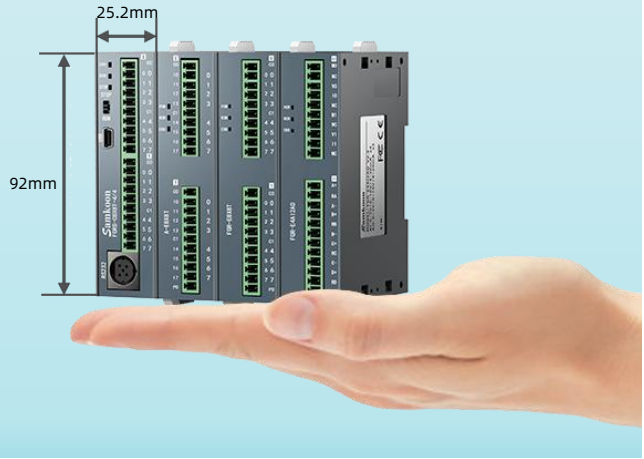


FGR Series MINI PLC



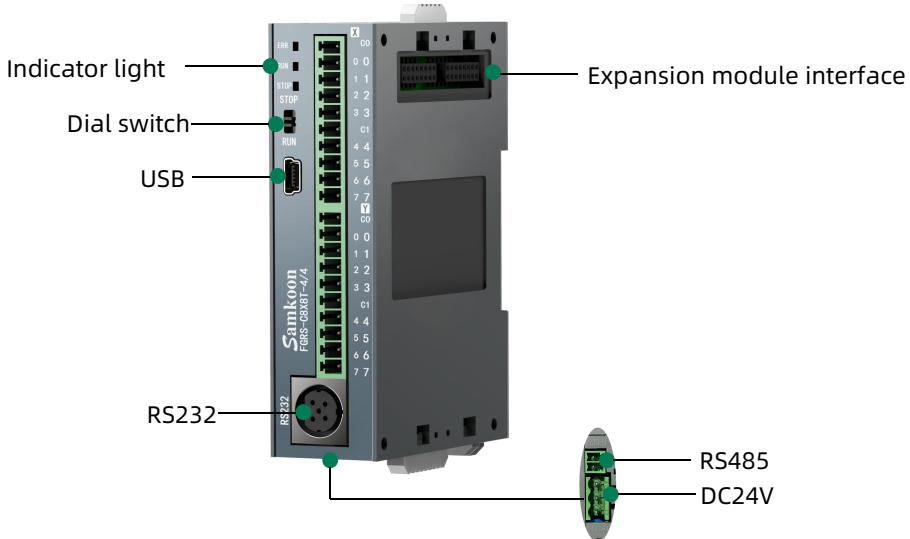
### MINI PLC

- Slim design, compact and practical
- Suitable for tight spaces and cost effective
- Flexible and comprehensive performance
- Fast, safe and reliable data processing



FGR series MINI type PLC has compact structure, small size and light weight. It adopts ultra-thin design to reduce assembly space; it is equipped with powerful CPU processor for fast data processing and high security.

### Port Description



## Product specifications

Model	FGRB-C8X8T-2/2	FGRS-C8X8T-4/4	FGRB-C8X6R	
Structure and environment	Size (mm)	25.2×92×63.4	25.2×92×63.4	25.2×92×63.4
	weight (g)	102	102	102
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing))
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption(W)	1.5	1.5	1.5
	Power supply voltage	DC24V±20%	DC24V±20%	DC24V±20%
Input parameter	Digital input	8	8	8
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring		
	Input signal voltage	DC24V±20%	DC24V±20%	DC24V±20%
	High-speed counter	High-speed counting 2 channels up to 200KHz respectively	High-speed counting 4 channels up to 200KHz respectively	
	AB phase counter	1 channel up to 200KHz	2 channel up to 200KHz	
Output parameters	Digital output	8	8	6
	Output Type	ransistor/NPN	ransistor/NPN	relay
	The output voltage	24V	24V	24V
	Pulse output	2 channels up to 200KHz respectively	4 channels up to 200KHz respectively	NO
	Maximum inductive load	12VA	12VA	80VA
	Maximum resistance load	single point uptp 0.3A	single point uptp 0.3A	single output 2A, single end 4A
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A		
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute		
	CE certification	Complies with EN55032 and EN55035 standards		
	Protection class	IP30	IP30	IP30
Interface	RS232	One MINI 232 port, support upload and download, monitoring, serial port communication Baud rate: 1200Bps ~ 115200Bps		
	RS485	RS485 One MINI 485 interface for downloading, monitoring an serial portcommunication; Baud rate:1200Bps~115200Bps		
	USB port	Support upload and download, online monitoring		
	Software	SamSoar II	SamSoar II	SamSoar II

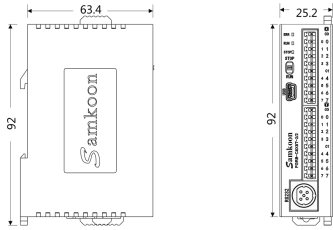
## Digital Module Features

Model	A-E16T FGR-E16T	A-E16X FGR-E16X	A-E12R FGR-E12R	A-E8X8T FGR-E8X8T	A-E8X8R FGR-E8X8R	
Structure and environment	Size (mm)	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4
	weight (g)	102	102	102	102	102
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption (w)	1.5	1.5	1.5	1.5	1.5
Input parameter	Digital input		16		8	8
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring				
	Power supply voltage		24VDC+20%		24VDC+20%	24VDC+20%
Output parameters	Digital output	16		12	8	8
	Output Type	ransistor/NPN		relay	ransistor/NPN	relay
	The output voltage	6~30VDC		<250VAC,30VDC	6~30VDC	<250VAC,30VDC
	Maximum inductive load	12VA		80VA	12VA	80VA
	Maximum resistance load	single point uptp 0.3A		single output 2A, single end 4A	single point uptp 0.3A	single output 2A, single end 4A
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A				
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute				
	CE certification	Complies with EN55032 and EN55035 standards				
	Protection class	IP30	IP30	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II	SamSoar II	SamSoar II

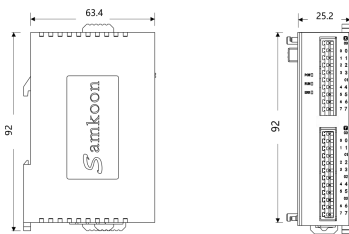
## Analog Module Features

Model	FGR-E4AI2AO	FGR-E4AI	FGR-E8AI	FGR-E2AO	FGR-E4TC	
Structure and environment	Size (mm)	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4	25.2x92x63.4
	weight (g)	102	102	102	102	102
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption (w)	2	1.5	1.5	1.5	0.5
Input parameter	Analog input	4	4	8		4
	Input model	Voltage/current measurement	Voltage/current measurement	Voltage/current measurement		Electric resistance PT100 K type,Y type thermal resistance couple
	Measuring range	0~5V , 0~10V, 4~20mA	0~5V , 0~10V, 4~20mA	0~5V , 0~10V, 4~20mA		-200°C ~+850°C
	Maximum output range	12V,30mA	12V,30mA	12V,30mA		
	Maximum resolution	0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA	0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA	0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA		0.1°C
	Digital to analog conversion accuracy	12 bit	12 bit	12 bit		16 bit
	Overall measurement accuracy	±5‰	±5‰	±5‰		±1°C
Output parameters	Analog output	2			2	
	Output model	Current/Voltage			Current/Voltage	
	Output range	0~5V , 0~10V, 4~20mA			0~5V , 0~10V, 4~20mA	
	Maximum resolution	0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA			0~5V: 1.25mV; 0~10V: 2.5mV; 4~20mA: 5uA	
	output accuracy	±5‰			±5‰	
	Output load impedance	≥1KΩ@10V ≥500Ω@5V ≤500Ω@20mA			≥1KΩ@10V ≥500Ω@5V ≤500Ω@20mA	
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A				
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute				
	CE certification	Complies with EN55032 and EN55035 standards				
	Protection class	IP30	IP30	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II	SamSoar II	SamSoar II

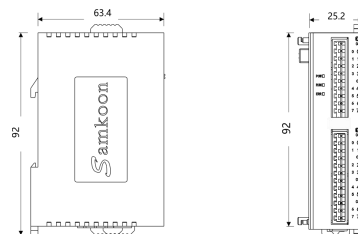
Product Size



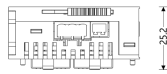
FGR Series PLC



Digital Module



Analog Module



Naming rules

**FGR**

①

□

②

**C**

③

**8X8T**

④

□ / □

⑤

⑥

- ① FGR: Mini-type product
- ② B: Basic CPU  
S: High-performance CPU  
E: Network model
- ③ C: Main control MCU modu

- ④ 8X: 8-transistor pulse input  
8T: 8-transistor pulse output
- ⑤ 2: 2 High speed input  
4: 4 High speed input
- ⑥ 2: 2 High speed output  
4: 4 High speed output

FGs Series Standard PLC







### Product Features

#### 1.High Speed

- Compiled architecture executing the native code directly, more than 10 times faster than interpreted architecture

#### 2.Fine security

- Upload, download, monitoring the password, upload forbidden, file encryption, subprogram password, function performance block encryption

#### 4.Customization

- Customizing the products based on clients' needs and correspondent scenes, providing fast and considerable technical support

#### 5.Price superiority of hardware

- 220v power supply, full choice of models, cost-effective

#### 7.Large storage

- Support more than 20,000 Lines of users' program storage,
- Support 16 Kbyte power-off storage area

#### 3.Flexible and comprehensive performance

- Pulse and high speed counting upto 200KHz frequency
- 2-4 pulse inputs for real-time speed and position control
- Support interpolation and electronic concave wheel function
- 2-4 high-speed counting, 1-2 AB phase counting, support multiple speed counting mode
- Support multiple high-speed counting interrupt threshold
- Support 8 extended modules

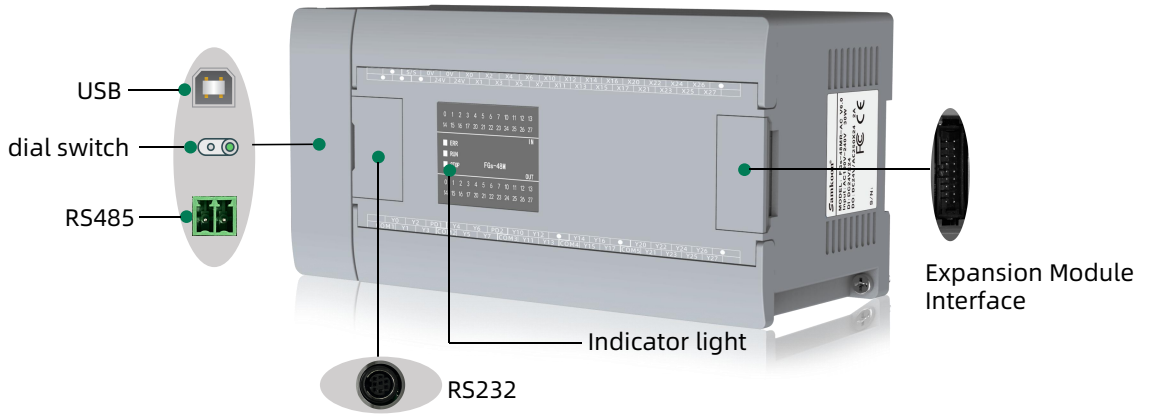
#### 6.Various of communication interface

- Support RS232, RS485, USB, free port and modbus
- Master-slave mode to achieve networking, up to connection with 127 communication devices

#### 8.Clock accuracy

- The external real-time clockchip is used to make the clock more accurate

端口介绍



Naming Rules



①FGs: basic series PLC

②16: input/output in total 16  
 32: input/output in total 32  
 48: input/output in total 32  
 64: input/output in total 64

③ MR: elementary unit relay output  
 MT: elementary Transistor output

④A: A: AC Power type

⑤C: compiled type

## FGs Series Standard PLC

### Product specifications

Mode		FGs-16MR-AC	FGs-16MT-AC	FGs-32MR-AC	FGs-32MT-AC
Structure and environment	Size (mm)	109.5×92×80	109.5×92×80	147.6×92×80	147.6×92×80
	weight (g)	465	454	590	563
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption(W)	3.2	2.6	5.2	3
	Power supply voltage	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V	AC 100V ~ 240V
Input parameter	High-speed counter	2 channels up to 200KHz respectively	2 channels up to 200KHz respectively	2 channels up to 200KHz respectively	2 channels up to 200KHz respectively
	AB phase counter	1 channel up to 200KHz	1 channel up to 200KHz	1 channel up to 200KHz	1 channel up to 200KHz
	Digital input	8	8	16	16
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring			
	input signalvoltage	DC24V±20%	DC24V±20%	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	80VA	12W	80VA	12W
	Maximum resistance load	single output 2A, single end 4A	single output 0.5A, single end 2A	single point 0.5A, total point 2A	0.5/high speed up to 200KH (Y0/Y1.) respectively; 0.2A/low speed10KHz (Y2-Y7) , concurrent no more than 3A
	Pulse output		2 channels up to 200KHz respectively		2 channels up to 200KHz respectively
	Digital output	8	8	16	16
	Output Type	Relay	Ransistor/NPN	Relay	Ransistor/NPN
	The output voltage	<250VAC,30VDC	6 ~ 30VDC	<250VAC,30VDC	6 ~ 30VDC
Interface	RS232	One mini232 port, support upload and download, monitoring, serial port communication Baud rate: 1200Bps ~ 115200Bps			
	RS485	One RS485 support serial port communication Baud rate: 4800Bps ~ 115200Bps			
	USB port	Support upload and download, online monitoring			
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A			
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute			
	CE certification	Complies with EN55032 and EN55035 standards			
	Protectionclass	IP30	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II	SamSoar II

Product specifications

Mode		FGs-48MR-AC	FGs-48MT-AC	FGs-64MR-AC	FGs-64MT-AC
Structure and environment	Size (mm)	185.7×92×80	185.7×92×80	216×92×80	216×92×80
	weight (g)	710	710	831	769
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption(W)	6	3.4	6.8	3.6
	Power supply voltage	AC 100V~240V	AC 100V~240V	AC 100V~240V	AC 100V~240V
Input parameter	High-speed counter	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively	4 channels up to 200KHz respectively
	AB phase counter	2 channel up to 200KHz	2 channel up to 200KHz	2 channel up to 200KHz	2 channel up to 200KHz
	Digital input	24	24	32	32
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring			
	input signal voltage	DC24V±20%	DC24V±20%	DC24V±20%	DC24V±20%
Output parameters	Maximum inductive load	80VA	12VA	80VA	12VA
	Maximum resistance load	Single output 2A, single end 4A	0.5A/high speed up to 200KH (Y0-Y3) respectively; 0.2A/low speed10KHz (Y4-Y27) , concurrent no more than 3A	Single point 0.5A, total point 2A	0.5A/high speed up to 200KH (Y0-Y3) respectively;0.2A/low speed10KHz (Y4-Y37) , concurrent no more than 3A
	Pulse output		4 channels up to 200KHz respectively		4 channels up to 200KHz respectively
	Digital output	24	24	32	32
	Output Type	Relay	Ransistor/NPN	Relay	Ransistor/NPNN
	The output voltage	<250VAC,30VDC	6 ~ 30VDC	<250VAC,30VDC	6 ~ 30VDC
Interface	RS232	One mini232 port, support upload and download, monitoring, serial port communication Baud rate: 1200Bps ~ 115200Bps			
	RS485	One RS485 support serial port communication Baud rate: 4800Bps ~ 115200Bps			
	USB port	Support upload and download, online monitoring			
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A			
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute			
	CE certification	Complies with EN55032 and EN55035 standards			
	Protectionclass	IP30	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II	SamSoar II

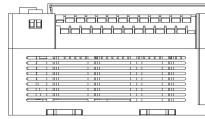
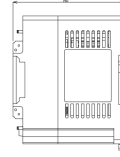
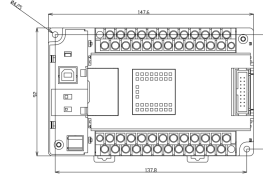
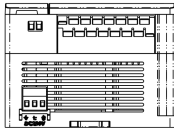
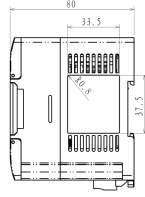
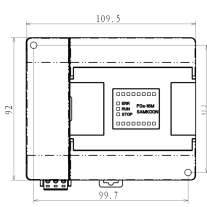
## Digital Expansion Module Specifications

Model		FGs-E16T-C	FGs-E16X-C	FGs-E16R-C	FGs-E8X8T-C	FGs-E8X8R-C
Structure and environment	Size (mm)	109.2×61.7×80	109.2×61.7×80	109.2×61.7×80	109.2×61.7×80	109.2×61.7×80
	weight (g)	250	250	250	250	250
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption (W)	1.5	1.5	1.5	1.5	1.5
Input parameter	Digital input		16		8	8
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring				
	input signal voltage		24VDC±20%		24VDC±20%	24VDC±20%
Output parameters	Maximum inductive load	12VA		80VA	12VA	80VA
	Maximum resistance load			Single output 2A, single end 4A		Single output 2A, single end 4A
	Digital output	16		16	8	8
	Output Type	Ransistor/NPN		Relay	Ransistor/NPN	Relay
	The output voltage	6~30VDC		<250VAC,30VDC	6~30VDC	<250VAC,30VDC
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A				
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute				
	CE certification	Complies with EN55032 and EN55035 standards				
	Protection class	IP30	IP30	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II	SamSoar II	SamSoar II

Analog Module Features

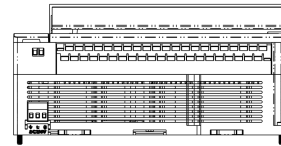
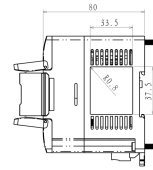
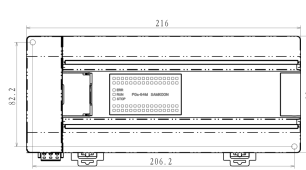
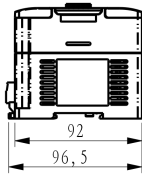
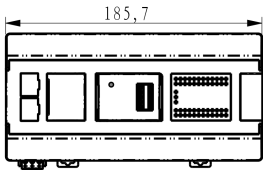
Model		FGs-E4AI2AO-C	FGs-E4TC-C	FGs-E8AI-C
Structure and environment	Size (mm)	109.2×61.7×80	109.2×61.7×80	109.2×61.7×80
	weight (g)	250	250	250
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)		
Power supply	Power consumption(W)	2	0.5	0.5
Input parameter	Digital input	4	4	8
	Input model	Curent/Voltage	Electric resistance PT100 K type, Y type thermal resistance couple	Curent/Voltage
	Measuring range	0~5V,0~10V,4~20mA	-200°C~+850°C	0~5V,0~10V,4~20mA
	maximum output range	12V,30mA	12V,30mA	12V,30mA
	Maximum resolution	0~5V :1.25mV 0~10V:2.5mV 4~20mA:5uA	0.1°C	0~5V :1.25mV 0~10V:2.5mV 4~20mA:5uA
	Digital to analog conversion accuracy	12bit	16bit	12bit
	overall measurement accuracy	±5%	±1°C	±5‰
Output parameters	Analog output	2		
	Output model	Curent/Voltage		
	Output range	0 ~ 5V,0 ~ 10V,4 ~ 20mA		
	Maximum resolution	0~5V:1.25mV 0~10V:2.5mV 4~20mA:5uA		
	Output accuracy	±5%		
	Output load impedance	≥1KΩ@10V ≥500Ω@5V ≤500Ω@20mA		
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A		
	high-voltage insulation test	Withstand voltage test 1000V AC, 1 minute		
	CE certification	Complies with EN55032 and EN55035 standards		
	Protection class	IP30	IP30	IP30
	Software	SamSoar II	SamSoar II	SamSoar II
Interface	RS485	One RS485 support serial port communication Baud rate: 4800Bps ~ 115200Bps		

Product Size



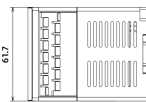
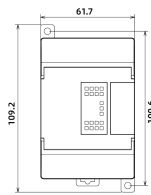
FGs-16MR-AC/FGs-16MT-AC

FGs-32MR-AC/FGs-32MT-AC



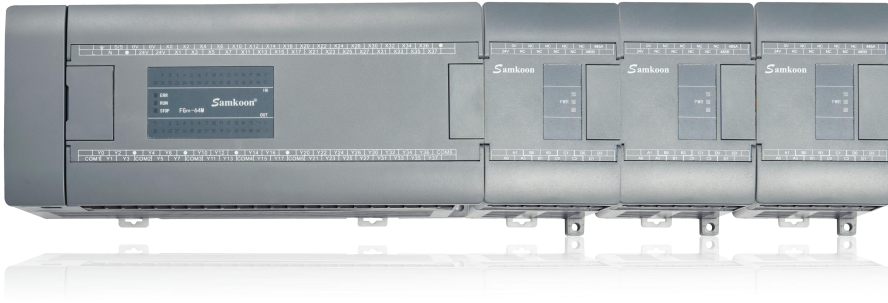
FGs-48MR-AC/FGs-48MT-AC

FGs-64MR-AC/FGs-64MT-AC



Digital Expansion Module/Analog Module





## Product Features

- Pulse and high speed counting up to 200KHz frequency
- 10 pulse inputs for real-time speed and position control, connection with up to 10 servos, stable and anti-jamming
- Support interpolation and electronic concave wheel function
- 12-input single phase counter, 6-input AB phase counter, support multiple speed counting mode
- Support 8 extended modules

## Naming Rules

FGm - 64 MT - A C  
 ①                      ②                      ③                      ④                      ⑤

①FGm: FGm series motion controller PLC

④A: AC Power type

②64: Input/output in total 64

⑤C: compiled type

MT: Delementary Transistor output

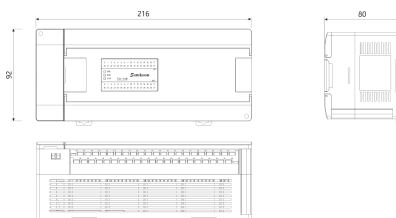
# FGm Series Motion Controller PLC

## Product specifications

Model		FGm-64MT-AC
Structure and environment	Size (mm)	216×92×80
	weight (g)	769
	Working environment temperature	-20°C~55°C (no freezing)
	Working environment humidity	5~95%(non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)
Power supply	Power consumption(W)	3.6
	Power supply voltage	AC 100V ~ 240V
Input parameter	High-speed counter	12 channels up to 200KHz respectively
	AB phase counter	6 channel up to 200KHz
	Digital input	32
	Input wiring	Supports SINK/SOURCE (sink/source), which can be converted by internal common terminal S/S and external common wiring
	input signal voltage	DC24V±20%
Output parameters	Maximum inductive load	12VA
	Maximum resistance load	0.5A/high speed up to 200KHz (Y0~Y11) respectively; 0.2A/low speed 10KHz (Y12~Y37) , concurrent no more than 3
	Digital output	32
	Output Type	ransistor/NPN
	The output voltage	DC 6 ~ 30V
	Pulse output	Pulse output 10 channels up to 200KHz respectively
Other parameters	FCC compatibility	Compatibility Complies with FCC, Class A
	High-voltage insulation test	Withstand voltage test 1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards
	Protectionclass	IP30
	Software	SamSoar II
Interface	RS232	One mini 232 port, support upload and download, monitoring, serial port communication Baud rate: 1200Bps - 115200Bps
	RS485	One RS485 support serial port communication Baud rate: 4800Bps ~ 115200Bps
	USB port	Support upload and download, online monitoring

Note: FGm series mainframe expansion modules can share FGs series expansion modules

## Product Size



All-in-one (HMI+PLC)



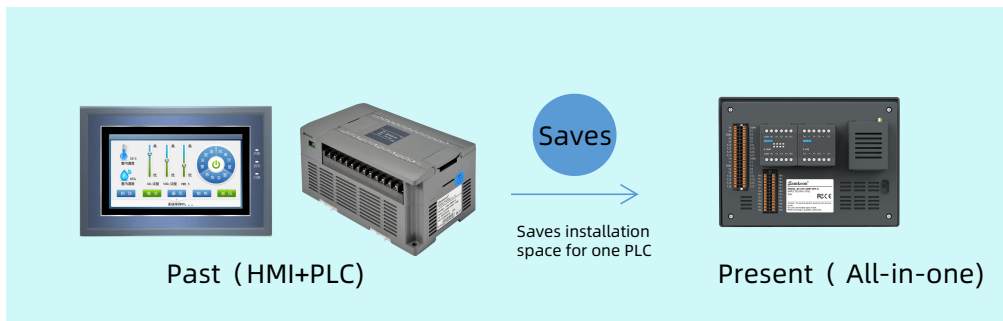
## All-in-one (HMI+PLC)



### Product Features

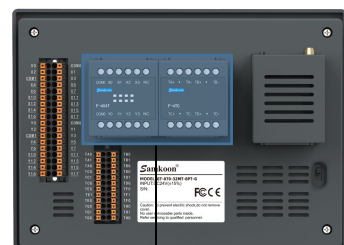
#### Compact and space-saving

● To achieve the same function, 1 HMI + 1 PLC was needed in the past, but now only 1 all-in-one machine is needed



#### The combination of HMI + PLC functions, a new operating experience

- Transistor output
- Screen configuration, ladder diagram programming integrated
- Maximum 4 channels high-speed calculation, maximum support of 4 channels of 100KHz pulse output
- Plug-in expandable up to 8 temperature inputs, supporting thermocouple/PT100/NI120
- I/O plug-in expandable up to 16 IO points



The back supports 2 small plug-in expansion modules, which can be combined with digital IO modules, analog modules, and temperature modules arbitrarily

Appearance upgrade, performance optimization, perfect integration of HMI and PLC



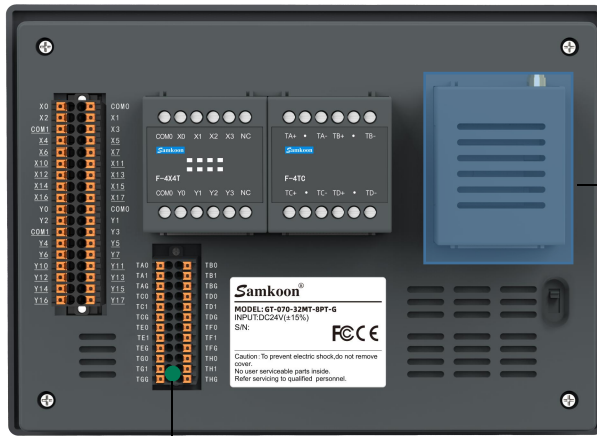
4.3 inch



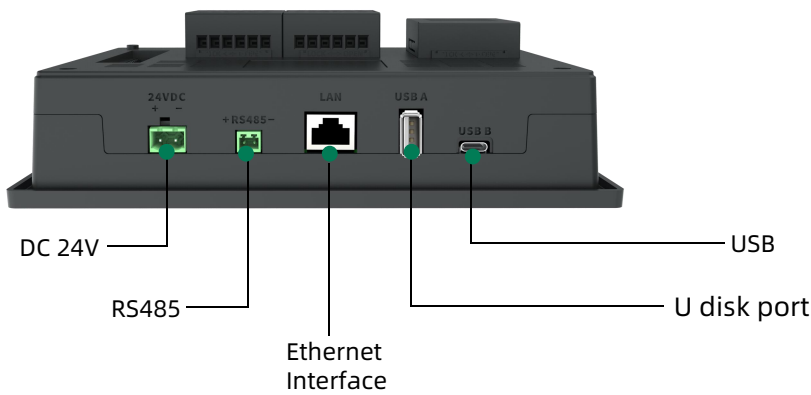
7 inch

**Abundant interfaces and powerful communication capabilities**

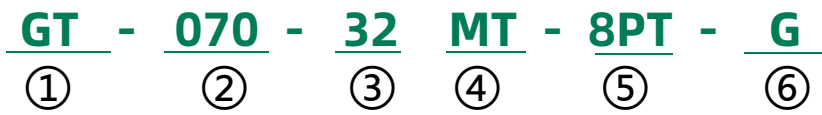
- Support multiple communication modes (RS485, ethernet, WIFI, 4G)
- Support usb download, U disk update configuration



Samkoon IoT expansion module, with WIFI mode and 4G mode selection, supports display control cloud platform, plug and play.



**Naming Rules**



- |   |  |
|---|--|
| <p>① GT:GT Series All-in-one (HMI+PLC)</p> <p>② 043: display size4.3"<br/>070: display size7"</p> <p>③ 16: input/output in total 16<br/>30: input/output in total 30<br/>32: input/output in total 32</p> | <p>④ MR: elementary unitrelay output<br/>MT: elementary transistor output</p> <p>⑤PT: temperature input</p> <p>⑥G: indicates with network module</p> |
|---|--|

## Product specifications

Model		GT-043-16MT	GT-070-32MT-G	GT-070-32MT
Structure and environment	Size(mm)	147x90x40	204x148x45	204x148x45
	Hole size (mm)	141x84	192x138	192x138
	Display size (mm)	4.3"(16:9)	7"(16:9)	7"(16:9)
	Weight (g)	286	700	700
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes)
	Shell material	engineering plastic ABS+PC	engineering plastic ABS+PC	engineering plastic ABS+PC
Power supply	Power supply voltage	DC24V±15%	DC24V±15%	DC24V±15%
	Static level	±6kV	±6kV	±6kV
Display	Resolution (PX)	480 x272	1024x600	1024x600
	Contrast	400:1	400:1	400:1
	Brightness	400cd/m <sup>2</sup>	400cd/m <sup>2</sup>	400cd/m <sup>2</sup>
	Touch panel	4-wire high precision touch panel	4-wire high precision touch panel	4-wire high precision touch panel
	Display colors	1677万	1677万	1677万
	Backlight Module	LED	LED	LED
Hardware	Storage	128MB DDR	128 MB DDR	128 MB DDR
	CPU	Cortex A7 1GHz. Dual Core	Cortex A7 1GHz. Dual Core	Cortex A7 1GHz. Dual Core
	RAM	128MB Flash	128MB Flash	128MB Flash
Other parameters	FCC Compatibility	Complies with FCC, Class A	Complies with FCC, Class A	Complies with FCC, Class A
	Withstand voltage test	1000V AC, 1 minute	1000V AC, 1 minute	1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards		
	Protection class	IP65 (front panel)	IP65 (front panel)	IP65 (front panel)
	Digital input	8	16	16
	High-speed counter	2 single-phase(X0、X2) 200kHz	2 single-phase(X0、X2) 200kHz	2 single-phase(X0、X2) 200kHz
	AB phase counter	2AB phase count (X0X1、X2X3)200kHz	2AB phase count (X0X1、X2X3)200kHz	2AB phase count (X0X1、X2X3)200kHz
	Digital output	8 transistors, including 4 high speed 200KHZ pulse outputs	16 transistors, including 4 high speed 200KHZ pulse outputs	16 transistors, including 4 high speed 200KHZ pulse outputs
	IO extensions	Up to 16 channels	Up to 16 channels	Up to 16 channels
	Temperature module extensions	With the plug-in, can be connected to 8 ways, support thermocouple / PT100	With the plug-in, can be connected to 8 ways, support thermocouple / PT100	With the plug-in, can be connected to 8 ways, support thermocouple / PT100
	Analog module extensions	Through the plug-in, 8 channels can be connected	Through the plug-in, 8 channels can be connected	Through the plug-in, 8 channels can be connected
	Configuration Software	SKTOOL7.1	SKTOOL7.1	SKTOOL7.1
Interface	IoT extension module	NO	support 4G module/WIFI module	NO
	USB port	YES	YES	YES
	U disk port	YES	YES	YES
	PLC communication port	NO	NO	NO
	HMI communication port	1 RS48	1 RS485	1 RS485
	Ethernet interface	NO	YES	YES

## Product specifications

Model		GT-070-32MT-8PT-G	GT-070-32MT-8PT
Structure and environment	Size(mm)	204x148x45	204x148x45
	Hole size (mm)	192x138	192x138
	Display size (mm)	7"(16:9)	7"(16:9)
	Weight (g)	700	700
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes))
	Shell material	engineering plastic ABS+PC	engineering plastic ABS+PC
Power supply	Power supply voltage	DC24V±15%	DC24V±15%
	Static level	±6kV	±6kV
Display	Resolution (PX)	1024x600	1024x600
	Contrast	400:1	400:1
	Brightness	400cd/m <sup>2</sup>	400cd/m <sup>2</sup>
	Touch panel	4-wire high precision touch panel	4-wire high precision touch panel
	Display colors	1677万	1677万
	Backlight Module	LED	LED
Hardware	Storage	128 MB DDR	128 MB DDR
	CPU	Cortex A7 1GHz. Dual Core	Cortex A7 1GHz. Dual Core
	RAM	128MB Flash	128MB Flash
Other parameters	FCC Compatibility	Complies with FCC, Class A	Complies with FCC, Class A
	Withstand voltage test	1000V AC, 1 minute	1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP65 ( front panel)	IP65 ( front panel)
	Digital input	16	16
	High-speed counter	2 single-phase(X0、 X2) 200kHz	2 single-phase(X0、 X2) 200kHz
	AB phase counter	2AB phase count(X0X1、 X2X3)200kHz	2AB phase count(X0X1、 X2X3)200kHz
	Digital output	16 transistors, including 4 high speed 200KHZ pulse outputs	16 transistors, including 4 high speed 200KHZ pulse outputs
	Temperature input	8PT	8PT
	IO extensions	Up to 16 channels	Up to 16 channels
	Temperature module extensions	With the plug-in, can be connected to 8 ways, support thermocouple / PT100	With the plug-in, can be connected to 8 ways, support thermocouple / PT100
	Analog module extensions	Through the plug-in, 8 channels can be connected	Through the plug-in, 8 channels can be connected
	Configuration Software	SKTOOL7.1	SKTOOL7.1
Interface	IoT extension module	support 4G module/WIFI module	NO
	USB port	YES	YES
	U disk port	YES	YES
	PLC communication port	NO	NO
	HMI communication port	1 RS485	1 RS485
	Ethernet interface	YES	YES

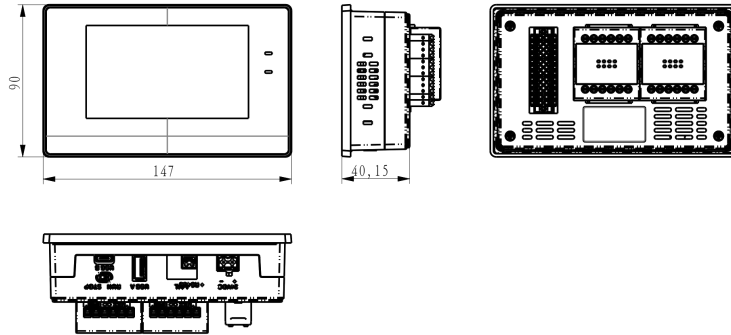


## Product specifications

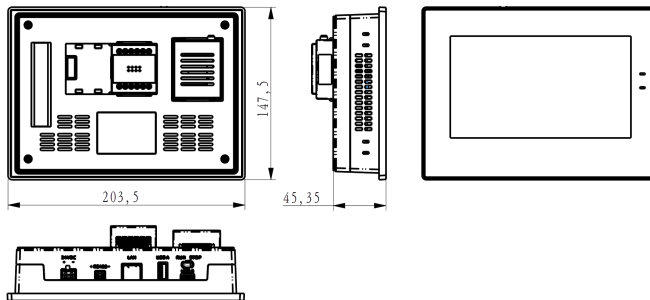
Model		GT-070-30MR-G	GT-070-30MR
Structure and environment	Size(mm)	204x148x45	204x148x45
	Hole size (mm)	192x138	192x138
	Display size (mm)	7"(16:9)	7"(16:9)
	Weight (g)	700	700
	Working environment temperature	-20°C~55°C (no freezing)	-20°C~55°C (no freezing)
	Working environment humidity	5~95% (non-condensing)	5~95% (non-condensing)
	Shock resistance	10 ~ 25HZ (XYZ direction 2G/30 minutes)	10 ~ 25HZ (XYZ direction 2G/30 minutes))
	Shell material	engineering plastic ABS+PC	engineering plastic ABS+PC
Power supply	Power supply voltage	DC24V±15%	DC24V±15%
	Static level	±6kV	±6kV
Display	Resolution (PX)	1024x600	1024x600
	Contrast	400:1	400:1
	Brightness	400cd/m <sup>2</sup>	400cd/m <sup>2</sup>
	Touch panel	4-wire high precision touch panel	4-wire high precision touch panel
	Display colors	1677万	1677万
	Backlight Module	LED	LED
Hardware	Storage	128 MB DDR	128 MB DDR
	CPU	Cortex A7 1GHz. Dual Core	Cortex A7 1GHz. Dual Core
	RAM	128MB Flash	128MB Flash
Other parameters	FCC Compatibility	FCC Compatibility	FCC Compatibility
	Withstand voltage test	1000V AC, 1 minute	1000V AC, 1 minute
	CE certification	Complies with EN55032 and EN55035 standards	Complies with EN55032 and EN55035 standards
	Protection class	IP65 (front pane)	IP65 (front pane)
	Digital input	16	16
	High-speed counter	2 single-phase(X0、X2) 200kHz	2 single-phase(X0、X2) 200kHz
	AB phase counter	2AB phase count(X0X1、X2X3)200kHz	2AB phase count(X0X1、X2X3)200kHz
	digital output	14-way relays	14-way relays
	IO extensions	Up to 16 channels	Up to 16 channels
	Temperature module extensions	With the plug-in, can be connected to 8 ways, support thermocouple / PT100	With the plug-in, can be connected to 8 ways, support thermocouple / PT100
	Analog module extensions	Through the plug-in, 8 channels can be connected	Through the plug-in, 8 channels can be connected
Configuration Software	SKTOOL7.1	SKTOOL7.1	
Interface	IoT extension module	support 4G module/WIFI module	NO
	USB port	YES	YES
	U disk port	YES	YES
	PLC communication port	NO	NO
	HMI communication port	1 RS485	1 RS485
	Ethernet interface	YES	YES

Product Size




4.3 inch



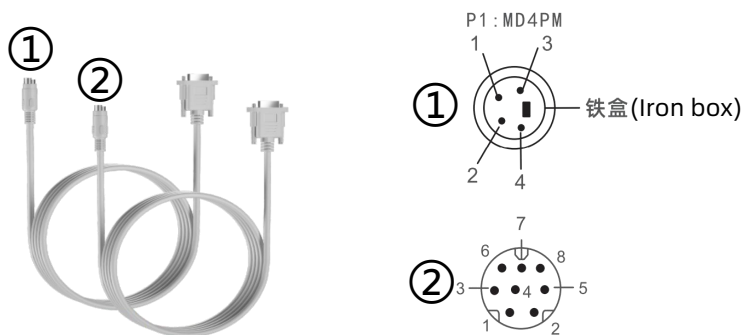
7 inch



USB download cable

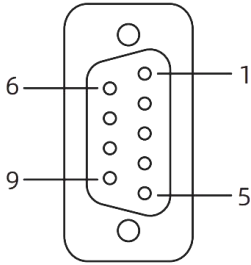
Product image	Corresponding product model
	FAT-16MT-AC, FAs-66MT-AC, FAs-50MT-AC, FAs-32MT-AC, GT-043-16MT, GT-070-32MT-G, GT-070-32MT, GT-070-32MT-8PT, GT-070-32MT-8PT-G, GT-070-30MR-G, GT-070-30MR
	FAs-40HT-AC, FAs-22HT-AC, FAs-16MT-AC, FAs-20MT-AC, FAs-20MR-AC, FAs-40MR-AC, FAs-40MT-AC, PRO-C 16X16T A, FGRB-C8X8T-2/2, FGRS-C8X8T-4/4, FGRB-C8X6R
	FGs-16MT-AC, FGs-16MR-AC, FGs-32MT-AC, FGs-32MR-AC, FGs-48MT-AC, FGs-48MR-AC, FGs-64MT-AC, FGs-64MR-AC

Communication Cable



illustrate:

- ① FAs series PLC、FAT series PLC Communication Cable
- ② FGR serie PLC、FGs serie PLC、FGm series PLC Communication Cable



DB9M(Male head)

SK series communication port 9-pin arrangement diagram of male seat

PIN	RS232	RS422	RS485
1			
2	RX		
3	TX		
4			
5	GND		
6		RX-	
7		RX+	
8		TX-	B-
9		TX+	A+

This port is used to connect PLC or other controllers with RS232/RS422/RS485 communication ports

1. The USB communication cable is used for uploading and downloading project filesf connecting the PC and the man-machine interface;
- 2.The communication cable connects the PLC and the man-machine interface to realize data communication, and the corresponding cable can be selected according to the PLC model used by the customer;

Note: Before using please read the product manual In detail.

## Based in China , Serving the world

Samkoon has been deeply engaged in the field of industrial automation for more than 10 years. Our products are exported to more than 30 countries and regions. Serving domestic and foreign leading enterprises in various industries, providing high-quality products and services for customers of different scales.



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