

# LE Series Programmable Logic Controller

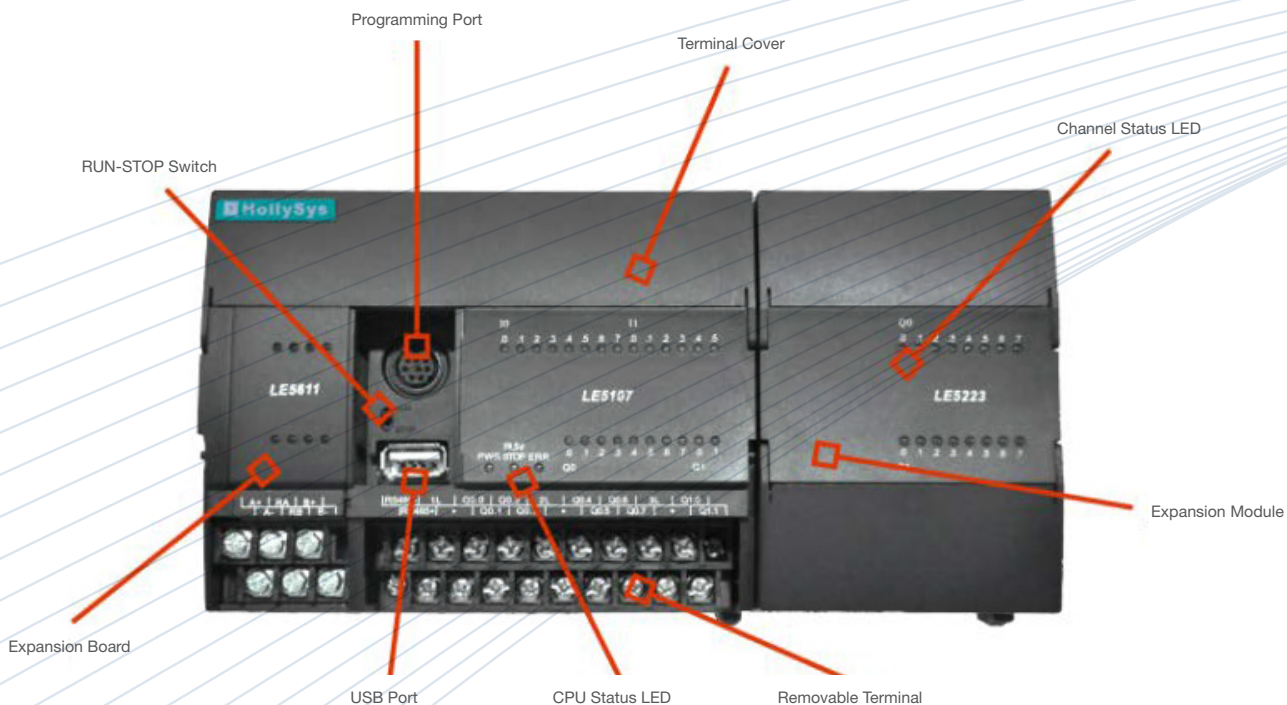
# LE PROGRAMMABLE LOGIC CONTROLLER



## Overview

LE Compact Series Programmable Controller (PLC) is a high performance product which it integrates the flexible structure of small PLCs and the powerful capability of medium PLCs. It can be widely used in the constant-pressure water supply, HVAC, textile machinery, packaging machinery, printing machinery, plastic machinery, food machinery and other industries with small and medium-sized process control field.

LE Series includes: CPU modules and a wide variety of extension modules, functional boards, accessories. Apart from the integrated I/O channels, high-speed counting, high-speed output and other special functions in CPU module, in order to achieve control IO capability requirements under certain conditions. For networking communication requirements, HollySys provides dedicated communication module like Profibus-DP Slave module, Ethernet Slave module.



# GENERAL SPECIFICATION

Environmental Specifications	Transportation & Storage	Temperature	IEC 60068-2-1 IEC 60068-2-2	-40°C + 70°C
		Relative Humidity	IEC 60068-2-30	5%~95%, Non-condensing
		Dumped and Overturned	IEC 60068-2-31	50mm Fall 4 times, Unwrapped
		Free Fall	IEC 60068-2-32	1m, 5 times, Transport and Package
	Operation Conditions	Working Temperature	IEC 60068-2-1 IEC 60068-2-2	0°C ~ +60 °C
		Temperature Variation	IEC 60068-2-14	5°C ~ 55°C, 3°C/ Min
		Mechanical Shock	IEC 60068-2-27	15G, Duration for 11ms, 6 times per axis
Sinusoidal Vibration		IEC 60068-2-6	5Hz ≤ f ≤ 9Hz, 3.5 mm Displacement; 9Hz ≤ f ≤ 150Hz, 1G Acceleration	
Level of Machnical Enclosure	EN60529	IP20		
EMC Specifications	All Ports	Electrostatic Discharge	IEC61000-4-2	Contact Discharge 6 KV, Air Discharge 8KV
		Frequency Magnetic Field Immunity	IEC 61000-4-8	30A/m
		Radio-Frequency, Electmagnetic, Field Immunity Test	IEC 61000-4-8	80MHz~1GHz, 10V/m 1GHz~2.7GHz, 3V/m
		Radio Frequency Sensing Conducted Harassment	IEC 61000-4-6	0.15~80MHz, 3V RMS
	AC System	Voltage Drop or Interruption	IEC 61000-4-11	Each polarity interrupted by 0.5 cycles
		EFT	IEC61000-4-4	2KV
		Surge Transients Immunity	IEC 6 1000-4-5	Line to Ground, 1KV
	Signal	Surge Transients Immunity	IEC61000-4-5	Line to Ground, 1KV
		I/O	EFT	IEC61000-4-4
	Electromagnetic Compatibility		Radiated Interference	IEC 61131-2
Conducted Interference		IEC61131-2	0.15 ~ 0.5MHz, Quasi-Peak less than 79dB(μV) 0.5 ~ 30MHz, Quasi-Peak less than 66dB(μV)	

## MODULE LIST

Model Type	Model	Description and Specification	Dimension ((mm)
Standard CPU Module	LE5104	14 points I/O CPU module, DC24V power supply, DI 8 × DC24V, DO 6 × transistor output	78 × 97 × 90
	LE5106	24 points I/O CPU module, DC24V power supply, DI 14 × DC24V, DO 10 × transistor output	117 × 97 × 90
	LE5107	24 points I/O CPU module, AC230V power supply, DI 14 × DC24V, DO 10 × relay output	
	LE5107E	24 points I/O CPU module, AC230V power supply, DI 12 × DC24V, DO 8 × relay output, 2×AI (4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V), 2 × AO (4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V)	
	LE5108	40 points I/O CPU module, DC24V power supply, DI 24 × DC24V, DO 16 × transistor output	147 × 97 × 90
Economical CPU Module	LE5107L	24 points I/O CPU module, AC230V power supply, DI 14 × DC24V, DO 10 × relay output, economy	117 × 97 × 90
	LE5109L	24 points I/O CPU module, AC230V power supply, DI 24 × DC24V, DO 16 × relay output, economy	147 × 97 × 90
Function Board	LE5600	RS232 communication expansion board	29 × 62 × 26
	LE5601	RS485 communication expansion board	
	LE5611	2-channel analog input expansion board, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	
	LE5621	1 channel analog output expansion board, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	

# MODULE LIST

Model Type	Model	Description and Specification	Dimension ((mm)
Digital Module	LE5210	8-channel digital input module, DI 8 × DC24V input	78 × 97 × 90
	LE5211	16-channel digital input module, DI 16 × DC24V input	78 × 97 × 89
	LE5212	32-channel digital input module, DI 32 × DC24V input	108 × 97 × 89
	LE5220	8-channel digital output module, DO 8 × DC24V transistor output	47 × 97 × 89
	LE5221	8-channel digital output module, DO 8 × relay output	
	LE5223	16-channel digital output module, DO 16 × relay output	70 × 97 × 89
	LE5224	32-channel digital output module, DO 32 × DC24V transistor output	108 × 97 × 89
Analog Module	LE5310	4-channel analog input, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	70 × 97 × 89
	LE5311	8-channel analog input, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	
	LE5320	2-channel analog output, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	47 × 97 × 89
	LE5321	4-channel analog output, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	70 × 97 × 89
	LE5330	4-channel analog input, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V, 2-channel analog output, 4 ~ 20mA / 0 ~ 20mA / 0 ~ 10V	
	LE5341	4-channel RTD input, Cu50, Pt100 (385), Pt100 (3916)	
LE5401	PROFIBUS-DP slave communication module		
Comm. Module	LE5403	Ethernet communication module, supported remote download	70 × 97 × 89
	LE5401	PROFIBUS-DP slave communication module	
Accessory	LEX5810	485 circular interfaces to USB download cable, 3m	-
	LEX5812	Extension extension cable, 2m	
	LEX5813	485 circular interfaces to USB download cable, 3m	
	LEX5817	LE and HT8000 communication cable, 3m	
	LEA5820	USB memory card for backup	

## PRODUCT FEATURES

### 1. Powerful Extension Ability

- **Variety of Expansion Modules**

- Provide a variety of DI, DO, AI, AO, communication modules to achieve economical and practical requirement.



- **Maximum of 20 Expansion Modules**

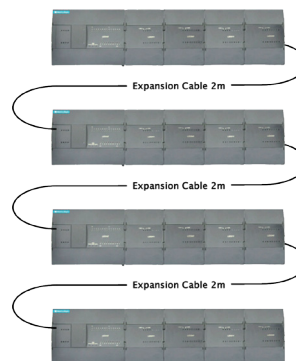
- Digital IO capacity up to 684 points
- Analog IO capacity up to 162 points



Max 20 Modules

- **Support Extension Cable**

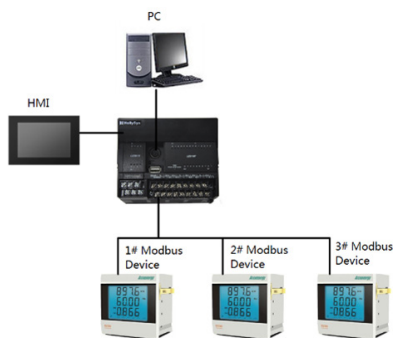
- Extension IO modules can be installed in different cabinets via the extension cables.
- Up to 3 cables per PLC set.



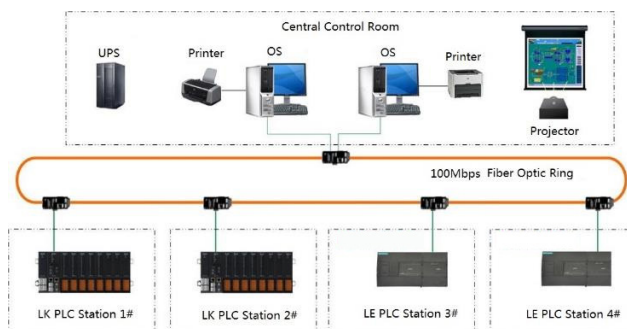
## 2. Rich COMM Interface & Open Protocol

- **Maximum of 3 Serial Ports**

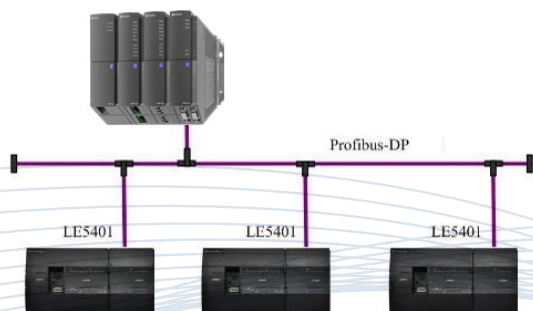
- Built-in 2 × RS485 interfaces, 1 × function board for extension of RS485. All RS485 ports support Modbus RTU Master/Slave and Free Port Protocol.



- **Support Ethernet Communication & Remote Download**

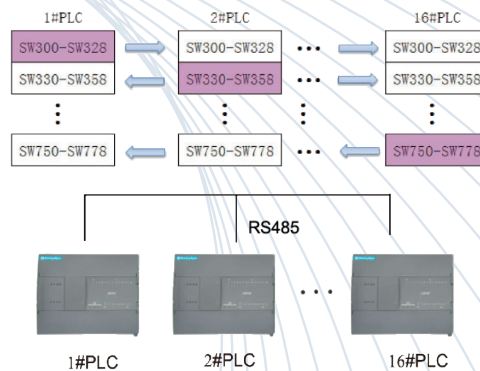


- **Support Profibus-DP Communication**



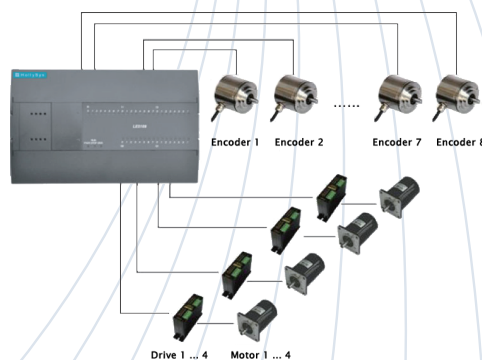
## 3. Machine Interconnection

- Data exchange between 16 LE CPU(s) established by setting via the built-in RS485 port without the requirement of programming.



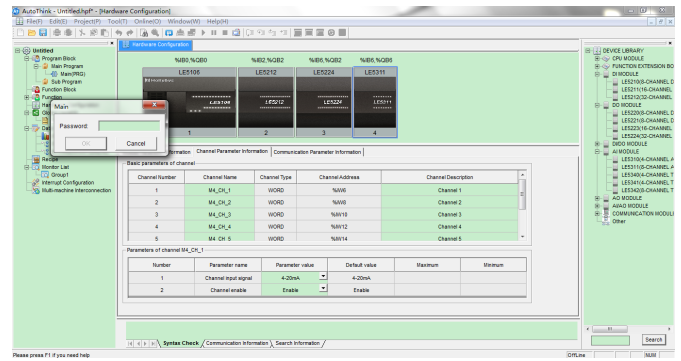
## 4. Powerful Motion Control Ability

- Built-in 8 channels 200KHz HSC and 4 channels 100KHz pulse output.



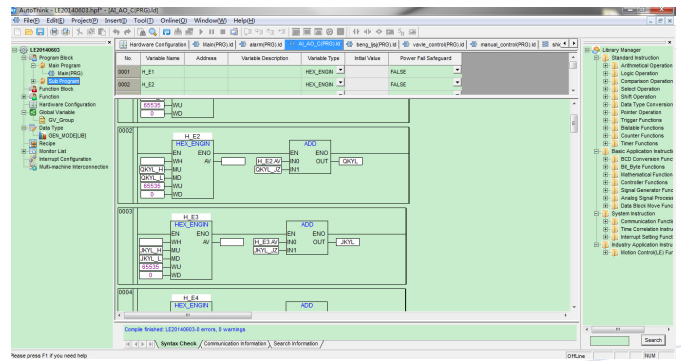
## 5. Enhanced Program Security

- Engineering software supports 6 ~12 bits of password encryption in program, subroutine and library. Not only that, the software also support enabling or disabling of program uploading function to further enhance the program security.



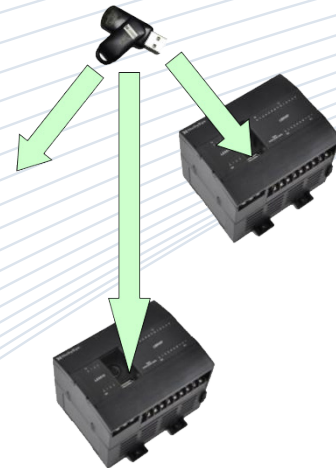
## 6. User Friendly Engineering Software

- LE programming software AutoThink comply with IEC 61131-3 standard.
- Hardware configuration and calling of function block by simply drag and drop.
- Communication setting is easier and straightforward.



## 7. Batch Download of Compiled Program via USB

- Batch downloading via USB card can prevent end-user from uploading and decompiling and enhance program confidentiality.



# LE CPU TECHNICAL SPECIFICATIONS

Product Model		LE5104	LE5106	LE5107	LE5107E	LE5108	LE5107L	LE5109L
Product Type		Standard	Standard	Standard	Standard	Standard	Economy	Economy
Built-in I/O		8DI/6DO	14DI/10DO	14DI/10DO	12DI/8DO/2AI/2AO	24DI/16DO	14DI/10DO	24DI/16DO
Digital Output Type		Transistor	Transistor	Relay	Relay	Transistor	Relay	Relay
Built-in Analog Channel		None			2AI/2AO	None	None	
Number of I/O Expansion Modules (MAX)		10	16		4	20	4	7
Function Board		No Supported	Supported		Supported			
High Speed Counter	Single Phase	2 Channels 20KHz	4 Channels 100KHz		2 Channels 5KHz	8 Channels 200KHz	2 Channels 5KHz	
	A/B Phase							
HSC Range		-2 <sup>31</sup> ~ 2 <sup>31</sup> -1			-2 <sup>31</sup> ~ 2 <sup>31</sup> -1			
High Speed Pulse		2 Channels 20KHz	2 Channels 100KHz	Not Supported	Not Supported	4 Channels 100KHz	Not Supported	
Pulse Capture		2 Channels 50μs	4 Channels 10μs		2 Channels 200μs	8 Channels 10μs	2 Channels 200μs	
Fast External Interruption		2 Channels 50μs	4 Channels 10μs		2 Channels 200μs	6 Channels	2 Channels 200μs	
Immediate Output		6 Channels	10 Channels	Not Supported	Not Supported	16 Channel1s0μs	Not Supported	
USB Disk		No Supported	Supported		Supported			
Program Uploaded		Supported			No Supported	Supported	No Supported	
Value Force		Supported			No Supported	Supported	No Supported	
RTC	Built-in RTC	Supported			Supported			
	Precision	±3Min/Month			±3Min/Month			
Program Area		64KB	128KB		128KB	256KB	128KB	
Input Area		1KB	1KB		128KB	1KB	128KB	
Output Area		1KB	1KB		128KB	1KB	128KB	
Middle Register Area		4KB	8KB		3KB	16KB	3KB	
Random Area		9KB	21KB		5KB	37KB	5KB	
Special Register Area		1KB	1KB		1KB	1KB	1KB	
Power Loss Retain Area		2KB	4KB		2KB	8KB	2KB	
Binary Instruction Speed		0.1μs			0.1μs			
Comm.	Interface	1 RS485	2 RS485		2 RS485			
	Protocol	Modbus RTU Master/Slave, Free Port Protocol, Multi-Machine Interconnection	Modbus RTU Master/Slave, Free Port Protocol, Multi-Machine Interconnection		Modbus RTU Master/Slave, Free Port Protocol, Multi-Machine Interconnection			
Input Rated Voltage		24VDC		220VAC	220VAC	24VDC		
Output Rated Voltage		24VDC			Not Supported	24VDC	Not Supported	
Dimensions (mm)		78 × 97 × 90	117 × 97 × 90		117 × 97 × 90	147 × 97 × 90	117 × 97 × 90	147 × 97 × 90

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