

LE5109 24**16****CPU**

CPU				
I	O	24	24VDC	16
				100~240VAC

LE5109 24 DI / 16 DO CPU Module

Technical Specifications

CPU Specifications		Power Supply Specifications			
On-board I/O	24 DI / 16 DO	Input	Rated voltage	100~240VAC	
I/O expansion module (max.)	20 (total modules power)		Permissible range	85~264VAC 50/60Hz	
Number of expansion board	1		Current consumption (max.)	1000mA	
Programming language	LD/ST/CFC/SFC	External output current (max.)	External output voltage		
Program memory	256K bytes		+24VDC (supply for expansion bus)	24VDC	950mA
Data memory	64K bytes		+24VDC (supply for peripheral device)	400mA	
Power-loss retentive memory	8K bytes		+5VDC (supply for expansion bus)	2500mA	
Memory card	Memory card with USB interface	Hold up time (loss of power)		80ms	
Communication Specifications					
HSC	8 HSC at 200KHz for single phase 4 HSC at 100KHz for A/B phase	Communication interface	2 RS485		
Pulse catch	8	Interface type	PS/2, pluggable terminals		
Fast external interruption	6	Baud rates (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200		
Frequency measurement	4				
Basic instruction processing time		Communication protocol	Proprietary protocol, Modbus master-slave, free port communication protocol, multi-PLC interconnection(only for terminal connecting)		
Input Specifications		Output Specifications			
Number of inputs	24	Number of outputs	16		
Input type	Sink/source	Output type	Relay		
Rated voltage	24VDC	Permissible range	5 30VDC or 5 250VAC		
Permissible range	0 30VDC	Output current	2A (resistance load)		
Logic 1 signal	15~30VDC, permissible min. current 3mA	Rated current per common (max.)	8A		
Logic 0 signal	0~5VDC, permissible max. 1mA	ON state resistance			
Filtering parameter	20ms, 50ms, 100ms ms,	Switching frequency (max.)	1Hz		
		Lifetime mechanical	No load: up to 10,000,000 open/close cycles		
Isolation mode	Optocoupler (field side to system)		Rated resistance 2A load: up to 100,000 open/close cycles		
Isolation groups	1	Isolation mode	Relay isolation (field side to system)		
Isolation withstand voltage	500VAC for 1 minute, leakage current <5mA	Isolation groups	4		
		Isolation withstand voltage	2500VAC for 1minute, leakage current <5mA		
Physical Specifications					
Dimensions W x H x D (mm)	147x97x90		Operating temperature	0 60	
Weight	875g		Storage temperature	-40 70	
Relative humidity	5%~95% (non-condensing)				

Definition of Indicators

Type	Color	Status	Description
Power supply PWR	Green	ON	Power supply works in normal mode.
		OFF	Power is defective or not supplied.
Channel status indicator Ix.y Qm.n	Green	ON	The channel is ON.
		OFF	The channel is OFF.
Operation indicator RUN/STOP	Green/ Yellow	ON green	PLC is in RUN mode and user program is running.
		ON yellow	PLC is in STOP mode and user program is not running.
		Flash alternately	1Hz 4Hz
Failure status indicator ERR	Red	ON	The CPU is in a failed mode.
		OFF	PLC is in normal operating mode.

i Instructions: possibility and solutions if ERR indicator is on:
 (1) System configuration of programming software is inconsistent with actual hardware configuration;
 Solutions: Check system configuration in programming software;
 (2) Communication with expansion module failed;
 Solutions: Check whether expansion module is connected correctly;
 (3) Report faults occurring to each expansion module;
 Solutions: Replace faulty expansion module;

Communication Interface

RS485 communication interface can establish connection to personal computer (PC) through programming cable, realize download of user program and on-line debugging and be applied to communication with field devices. Junction and communication between LE5109 CPU module and upper computer are achieved through PS/2 of LE5109 (at ① in the figure), junction and communication between LE5109 CPU module and expansion module are achieved through connector (at ② in the figure).

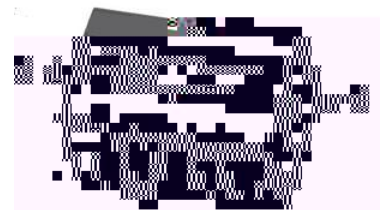
Definition of PS/2

Pin No.	Definition	Pin No.	Definition	Pin No.	Definition	Pin No.	Definition
1	—	3	—	5	RS485+	7	System GND
2	—	4	—	6	RS485-	8	System GND

Software Configuration

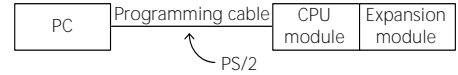
RUN/STOP selective switch position	Status of programming software	Module status
Run (Switch to upper position)	RUN	RUN: automatically changed into STOP if users download program in this status.
	STOP	STOP
Stop (Switch to lower position)	RUN/STOP	STOP(user's program stops, unable to run)

e and hardware are constrained each other.



> **Communication Connection**

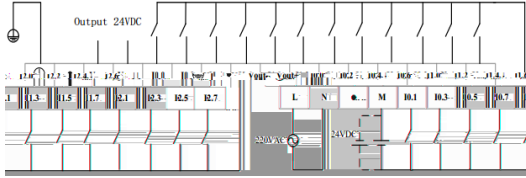
- Before downloading, please confirm that PLC is connected as per the schematic diagram. Please use HollySys PLC programming cable to download the program.
- Before downloading, please confirm that AutoThink V3.1.0 or above version has been installed
- instructions for downloading.



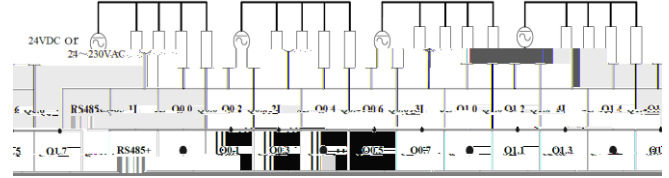
⚠ **Caution:**

- (1) Cover of the terminal should be fastened properly prior to power on of the PLC system to avoid unnecessary personal injury or device damage.
- (2) When connecting or removing PLC power, severe personal injury or device damage may be caused if power is not isolated. Therefore, before module installation or removal, all power must be turned off and please pay attention to this at any time.
- (3) Before connecting power to PLC, please confirm programming cable is connected properly and please do not remove from or insert into communication port during power on to avoid device damage.
- (4) If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- (5) Warning symbol for high voltage, please do not touch equipment with the warning symbol, operation in electricity is strictly prohibited.

> **Terminal Definition and Connection**



LE5109 Upper Terminals Definition and Wiring Diagram



LE5109 Lower Terminals Definition and Wiring Diagram

LE5109 Upper Terminals Definition

Terminal Identification	Description	Terminal Identification	Description	Terminal Identification	Description	Terminal Identification	Description
	Grounding	L	Fire wire	Vout-	Output negative 24VDC		No connection
	No connection	N	Null wire	Vout+	Output positive 24VDC	M	Common of Input
I0.0	Fast external interruption 1/ Pulse catch 1/Frequency measurement 1/Single-phase counter 1/ A/B phase counter 1 phase A / Ordinary input	I0.1	Fast external interruption 2/ Pulse catch 2/Frequency measurement 2/Single-phase counter 2/ A/B phase counter 1 phase B / Ordinary input	I0.2	Fast external interruption 3/ Pulse catch 3/Frequency measurement 3/Single-phase counter 3/ A/B phase counter phase A / Ordinary input	I0.3	Fast external interruption 4/ Pulse catch 4/Frequency measurement 4/Single-phase counter 4/ A/B phase counter 2 phase B / Ordinary input
I0.4	Single-phase counter 1 direction control /Ordinary input	I0.5	Single-phase counter 2 direction control / Ordinary input	I0.6	Single-phase counter 3 direction control /Ordinary input	I0.7	Single-phase counter 4 direction control /Ordinary input
I1.0	Single-phase counter 1 reset/ A/B phase counter 1 reset/Ordinary input	I1.1	Single-phase counter 2 reset/Ordinary input	I1.2	Single-phase counter 3 reset/ A/B phase counter 2 reset/Ordinary input	I1.3	Single-phase counter 4 reset/Ordinary input
I1.4	Fast external interruption 5/ Pulse catch 5/ Single-phase counter 5/ A/B phase counter 3 phase A /Ordinary input	I1.5	Fast external interruption 6/ Pulse catch 6/ Single-phase counter 6/ A/B phase counter 3 phase B /Ordinary input	I1.6	Pulse catch 7/ Single-phase counter 7/ A/B phase counter 4 phase A /Ordinary input	I1.7	Pulse catch 8/ single-phase counter 8/ A/B phase counter 4 phase B/Ordinary input
I2.0	Single-phase counter 5 direction control /Ordinary input	I2.1	Single-phase counter 6 direction control /Ordinary input	I2.2	Single-phase counter 7 direction control /Ordinary input	I2.3	Single-phase counter 8 direction control /Ordinary input
I2.4	Single-phase counter 5 reset/ A/B phase counter 3 reset/Ordinary input	I2.5	Single-phase counter 6 reset /Ordinary input	I2.6	Single-phase counter 7 reset/ A/B phase counter 4 reset/Ordinary input	I2.7	Single-phase counter 8 reset/ /Ordinary input

LE5109 Lower Terminals Definition

Terminal Identification	Description	Terminal Identification	Description	Terminal Identification	Description	Terminal Identification	Description
RS485-	Negative(RS485-)	RS485+	Positive (RS485+)				
1L	Common of Output (Q0.0 Q0.3)		No connection	3L	Common of Output (Q1.0 Q1.3)		No connection
Q0.0	Ordinary output	Q0.1	Ordinary output	Q1.0	Ordinary output	Q1.1	Ordinary output
Q0.2	Ordinary output	Q0.3	Ordinary output	Q1.2	Ordinary output	Q1.3	Ordinary output
2L	Common of Output Q0.4 Q0.7		No connection	4L	Common of Output (Q1.4 Q1.7)		No connection
Q0.4	Ordinary output	Q0.5	Ordinary output	Q1.4	Ordinary output	Q1.5	Ordinary output
Q0.6	Ordinary output	Q0.7	Ordinary output	Q1.6	Ordinary output	Q1.7	Ordinary output

> **Electrical Schematic Diagram**

