



# IO module selection manual

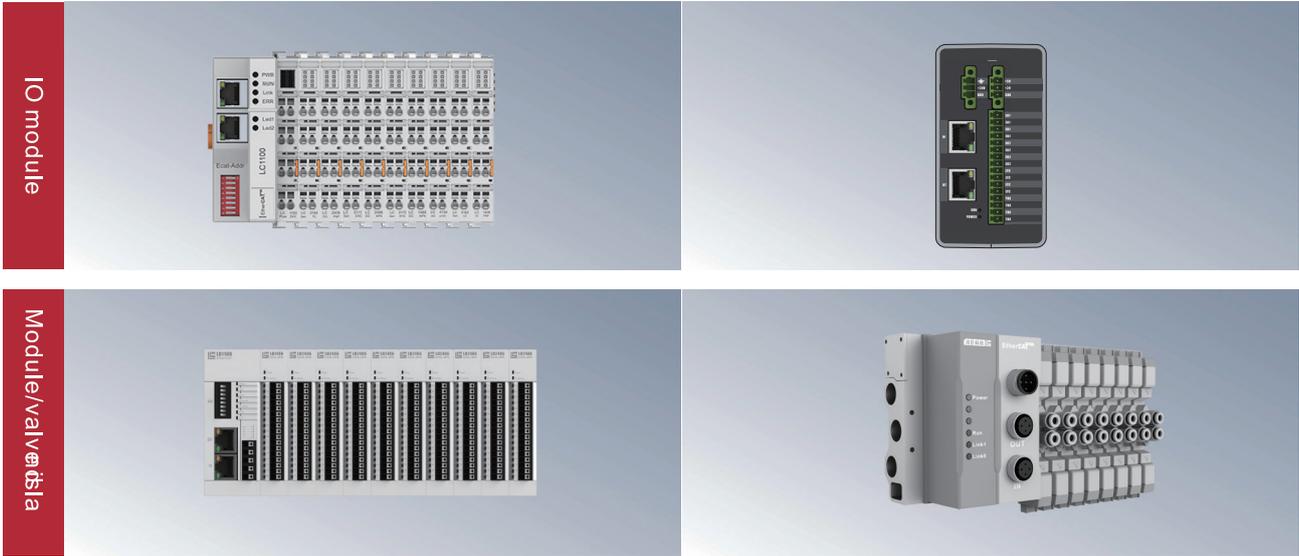
总线分布IO模块选型手册

# 2025

## IO module



# EtherCAT IO Module



PC control card

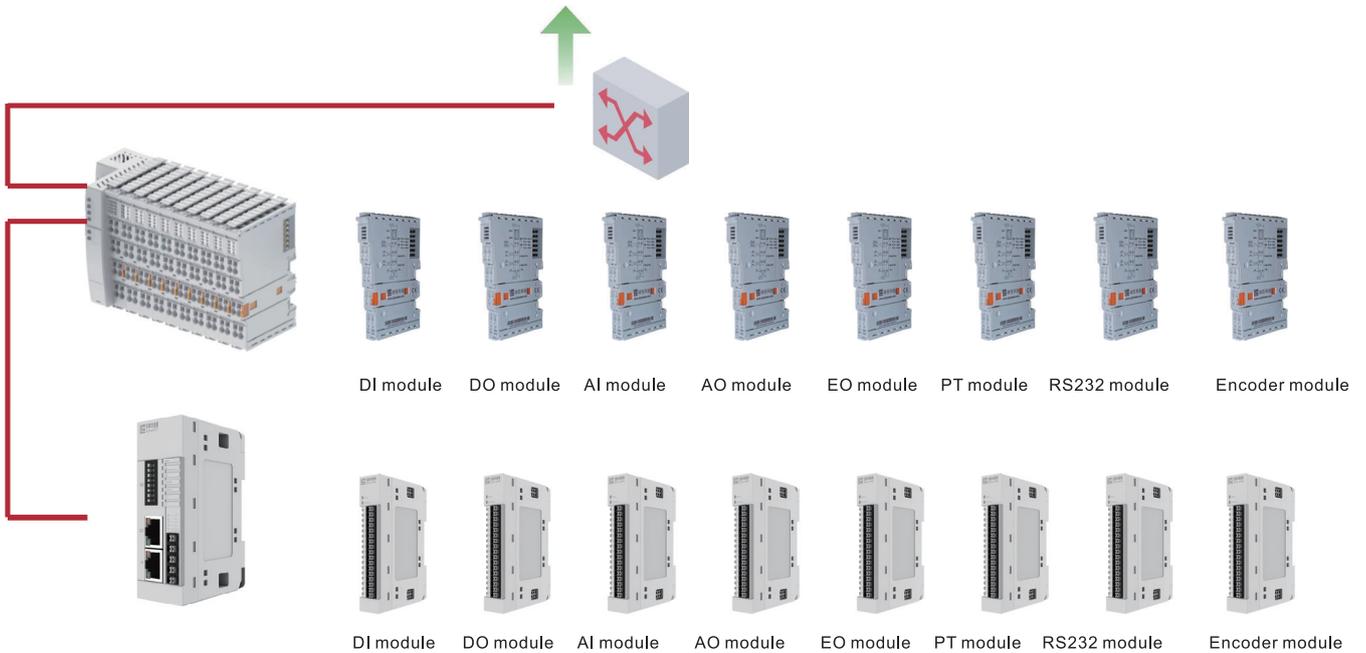


PLC



Third party control equipment

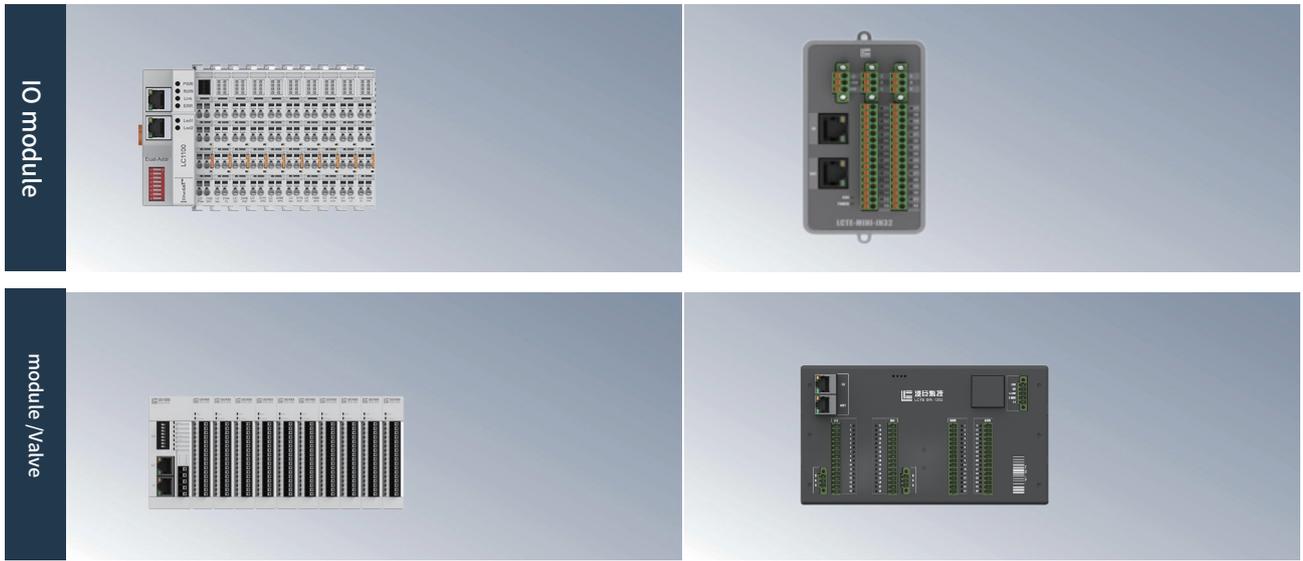
Ether-CAT protocol, ProfiNET protocol, and ModbusTCP protocol



Note: A maximum of 32 IO modules can be cascaded

# EtherCAT IO Module

## PRODUCT SYSTEMS

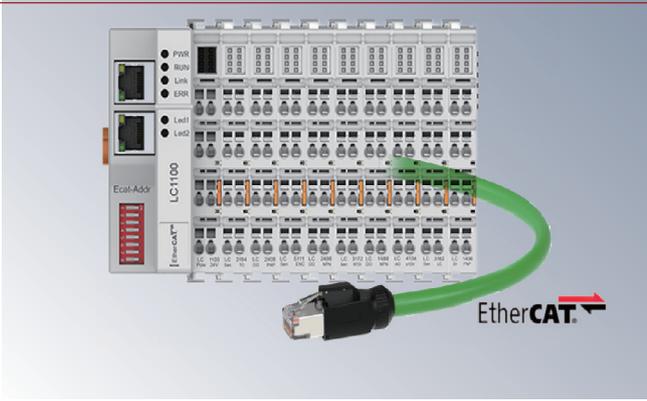


## Network adapter module

	Protocol	Type	No. of Slot	IO Data Size	Interface Type
	EtherCAT	--	32	sum of input (max.) 1024Byte, sum of output (max.) 1024Byte	2xRJ45
	Modbus TCP	--	32	/	1xRJ45
	Profinet	--	32	sum of input (max.) 1440Byte, sum of output (max.) 1440Byte	2xRJ45
	EtherNet/IP	--	32	sum of input (max.) 504Byte, sum of output (max.) 504Byte	2xRJ45



# EtherCAT IO Module



# Smart Remote IO Bus protocol adapter



## LC110X product Features:

Independent coupler design architecture Supports EtherCAT and Profinet protocols Support ADLINK master station Support for Siemens main station Supports the main OMRON station Supports KEYENCE main station Support for main BECKHOFF station Support for various CODESYS master

# Bus protocol IO module

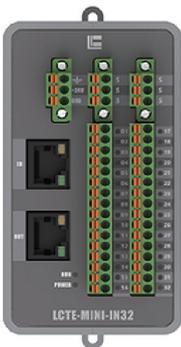


IO module DO module AI module AO module EO module PT module RS232 module RS485 module

Note: A maximum of 32 IO modules can be cascaded

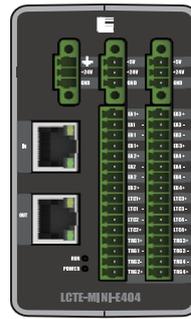
- LC1486(NPN)/LC1406(PNP): Digital 16 input module
- LC2486(NPN)/LC2408(PNP): Digital 16 output module
- LC1488(NPN)/LC1408(PNP): Digital 8 Input module
- LC2488(NPN)/LC2408(PNP): Digital 8 output module
- Lc3034: 4-20mA analog 4 current input module
- LC3114: 0-20mA analog 4 current input modules
- LC4114: 0-20mA analog output 4 current output modules
- LC3134: ±10V analog 4 voltage input modules
- LC4134: 10V analog 4 voltage output module
- LC3172: Thermal Resistance 2-channel input Module (3/4 wire PT100)
- LC3184: Thermocouple 4-channel input module (K/E/J/T thermocouple)
- LC3162: Pressure sensor 2-channel input module
- LC5001: Encoder 1 channel input module (A/B phase differential)
- Lc9000: Power module

# LCTE-MINI-IO



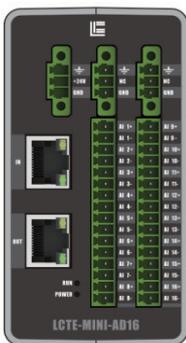
BASIC SPECIFICATION	
Product series	LCTE-MINI-IO series
Product name	LCTE-MINI-IO16(16 input,16 output)
	LCTE-MINI-IO16P(PNP output)
	LCTE-MINI-IO16K(16 output, with broken line to hold output)
	LCTE-MINI-IN32(32 inputs)
	LCTE-MINI-OUT32(32 outputs)
Dimension	LCTE-MINI-OUT32-K(32 output, with broken line to hold output)
	58x125x68mm
Bus rate	100Mbps
Distributed clock	support
Power supply	24V DC
Digital input	Polar compatibility (NPN/PNP)
Digital output	MOS tube (NPN), short circuit protection
Operating temperature	0 ~ 60°
Relative humidity	95%, no condensation
Communication cycle	Minimum 50us

# LCTE-MINI-E404/E202



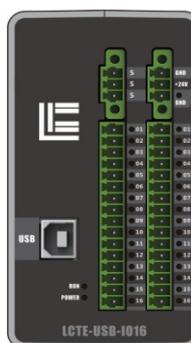
ITEM	ARGUMENT
Product series	MINI series
Product name	LCTE-MINI-E404
dimension	58x125x68mm
Network interface	100Mbps EtherCat
Network protocol	EtherCat
Power supply	24V DC
Encoder interface	Four channels, differential input, AB trust
Output interface	4 channels, differential output, RS422 level
Operating temperature	60 °
Relative humidity	95%, no condensation

# LCTE-MINI-AD



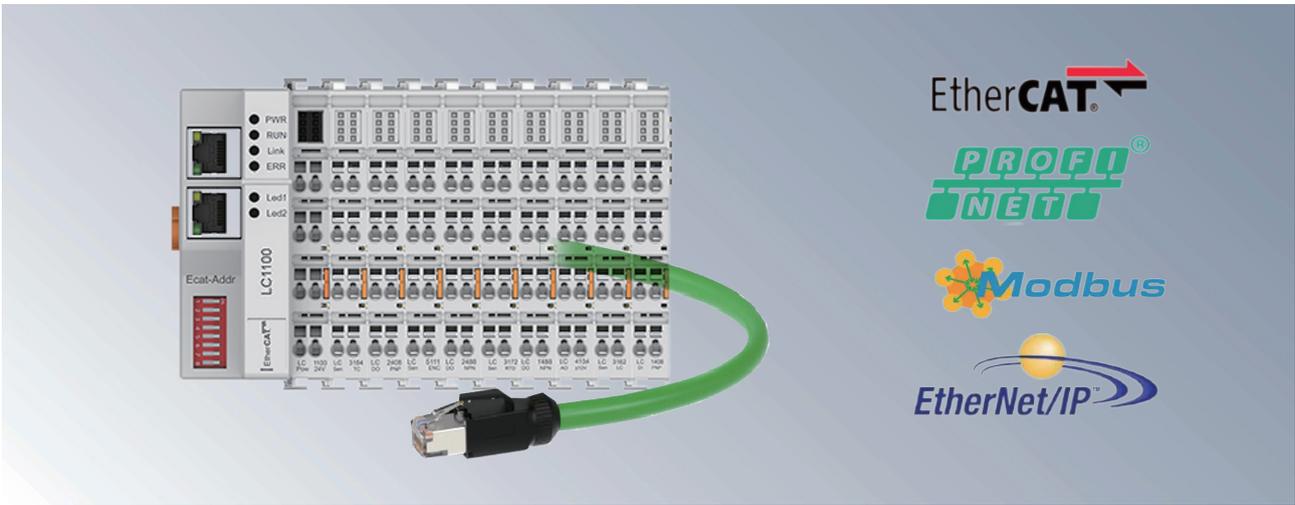
ITEM	ARGUMENT	
Product series	MINI-AD series	MINI-ADI series
Product name	LCTE-MINI-AD8	LCTE-MINI-AD18
	LCTE-MINI-AD16	LCTE-MINI-AD116
dimension	58x125x68mm	
Bus rate	100Mbps	
Distributed clock	support	
Power supply	24V DC	
Analog input channel number	Route 8 or 16	
Analog input range	-10V~+10V	-20MA~+20MA
Resolution	16-bit	
Operating temperature	0-60°	
Relative humidity	95% condensation free	
Communication cycle	Minimum 500us	

# LCTE-MINI-USB-IO16



ITEM	ARGUMENT
Product name	LCTE-USB-IO16
dimension	58x125x68mm
Bus rate	100Mbps
Distributed clock	support
Power supply	24V DC
Digital input	Polar compatibility (NPN/PNP)
Digital output	MOS tube (NPN), short circuit protection
Resolution	0 to 60° C
Operating temperature	- 20 ~ 70 °
Relative humidity	95%, no condensation
Communication cycle	Minimum 50us

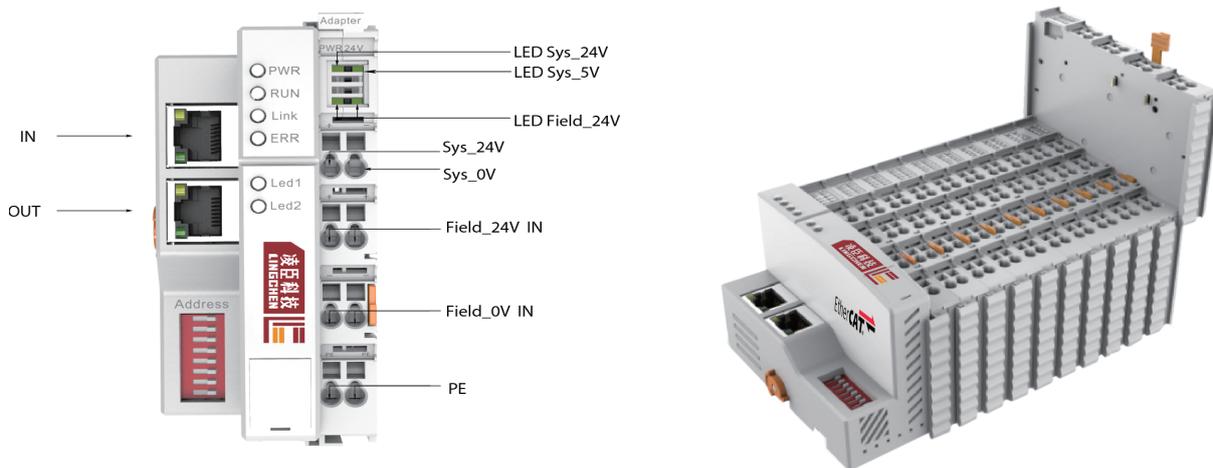
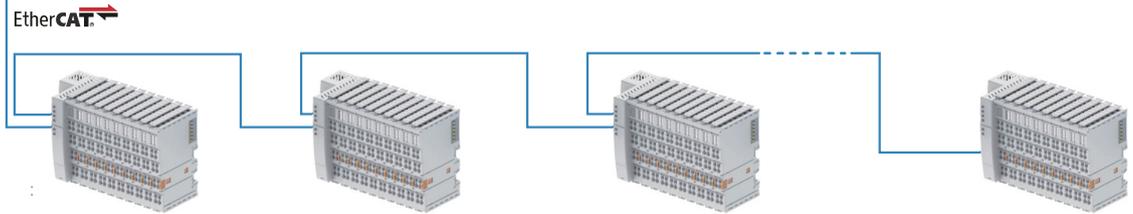
# EtherCAT IO Module



■ Lingchen technology bus distributed IO, adopt a chip structure, composed of adapters, IO modules, multiple modules can be combined with the program to use Flexible expansion of IO points and analog, temperature modules, etc., through the relevant certification and testing, safe and reliable.



Other brands support EtherCAT communication controllers



# EtherCAT IO Module

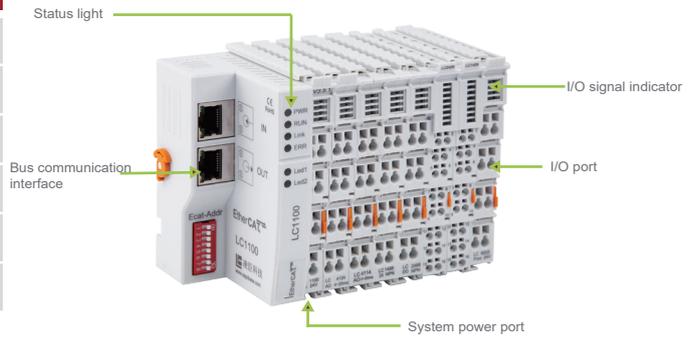
## LC 1100



Communication bus

Bus protocol	<b>EtherCAT</b> (DC, Ring network, Freerun)
Address setting	By dip
Universal cable	Super Class 6 shielded network cable
Transmission distance	100m(station distance)
Transmission rate	100Mbps
Output maximum byte	1024 bytes /1024 bytes
Other characteristics	Support address mapping

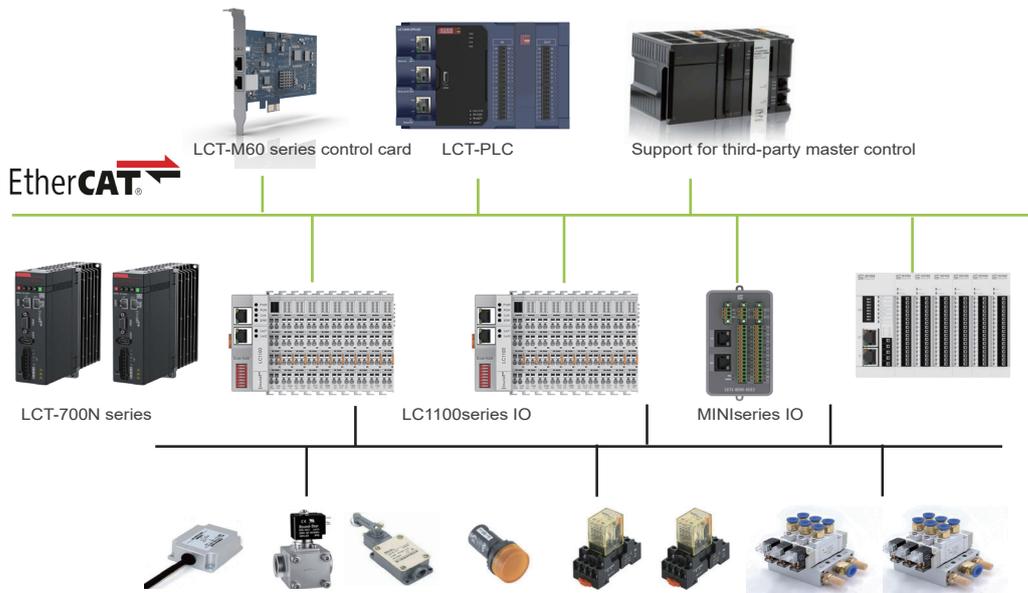
### Product composition



The adapter supports EtherCAT communication bus.  
I/O modules can be divided into digital input and output modules, analog input and output modules, and functional modules.  
It can be matched according to the actual needs of the site.  
Expandable up to 31 chip modules, excluding power module.

Power supply parameter	
EX System power input	24V(18 ~ 36V)
EX system side provides current	2A
Power input to the I/O port	24V(±20%)
Current output of the I/O port	10A(Max.)
Technical parameter	
Expand the number of I/O modules	32 piece
Monitoring type	Alarm warning Submodule disconnection alarm

### EtherCAT Network topology diagram Example



# EtherCAT IO Module

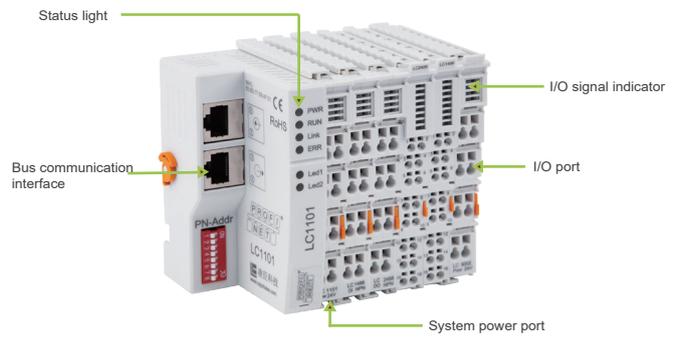
## LC 1101



Communication bus

Bus protocol	<b>Profinet (RT, IRT, MRP)</b>
Address setting	Per master
Universal cable	Five types of twisted pair
Transmission distance	(Station distance)
Transmission rate	100Mbps
Output maximum byte	340 bytes /340 bytes
Other characteristics	Support PROFINET RT,IRT

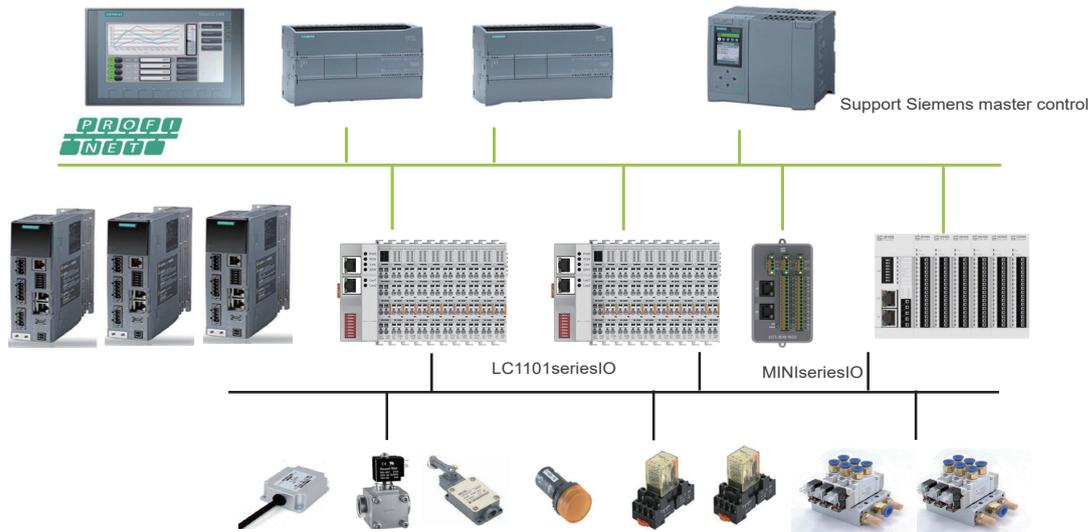
### Product composition



Adapter can support Profinet communication bus.  
I/O modules can be divided into digital input and output modules, analog input and output modules, and functional modules.  
It can be matched according to the actual needs of the site.  
Expandable up to 32 chip modules, excluding power module.

Power supply parameter	
LC1100 System power input	24V(18~36V)
LC1101 system side provides current	2A
Power input to the I/O port	24V(±20%)
Current output of the I/O port	10A(Max.)
Technical parameter	
Expand the number of I/O modules	32piece
Monitoring type	Alarm warning Submodule disconnection alarm

### PROFINET Topology diagram Example

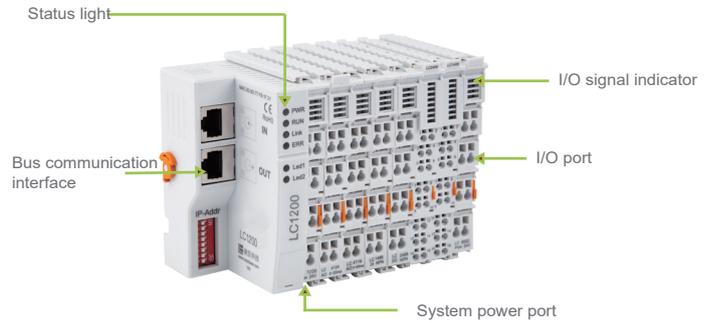


# EtherCAT IO Module LC 1200



Bus protocol	<b>MODBUS-TCP</b>
Address setting	By dip
Universal cable	Super Class 6 shielded network cable
<b>Communication bus</b>	

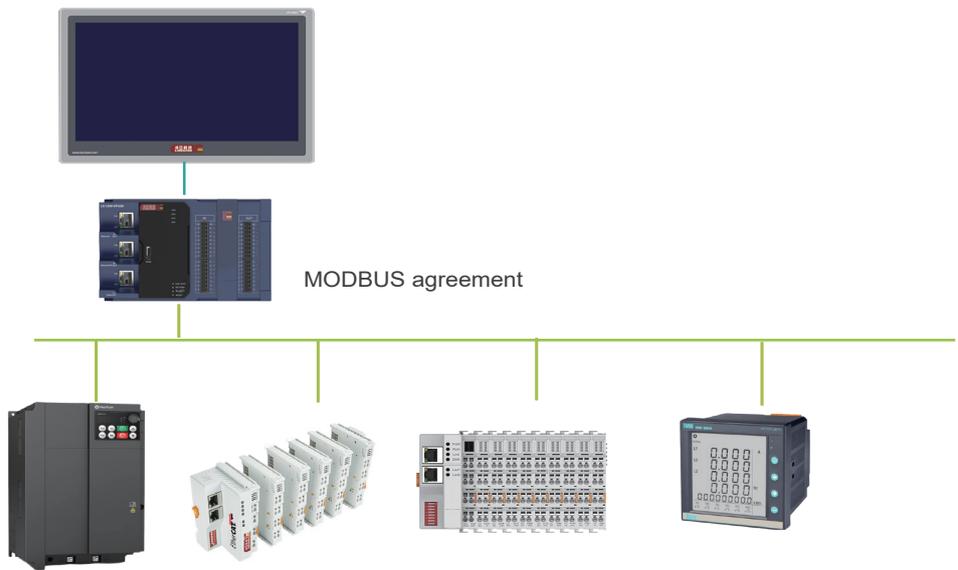
## Product composition



Adapter can support Profinet communication bus.  
I/O modules can be divided into digital input and output modules, analog input and output modules, and functional modules.  
It can be matched according to the actual needs of the site.  
Expandable up to 32 chip modules, excluding power module.

Power supply parameter	
EX System power input	24V(18~36V)
EX system side provides current	2A
Power input to the I/O port	24V(±20%)
Current output of the I/O port	10A(Max.)
Technical parameter	
Expand the number of I/O modules	32piece
Monitoring type	Alarm warning Submodule disconnection alarm

## Example of the MODBUS network topology

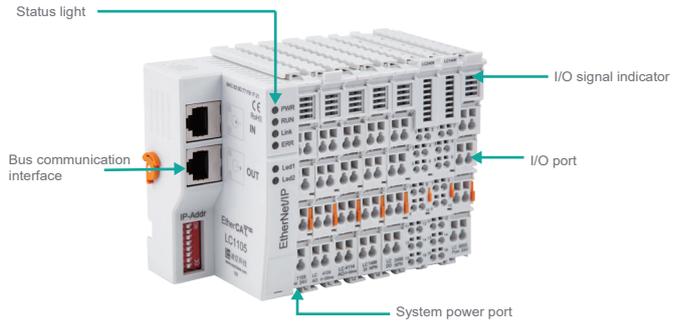


## LC 1105



Bus protocol	<b>Ethernet IP</b>
Address setting	Per master
Universal cable	Five types of twisted pair
<b>Communication bus</b>	

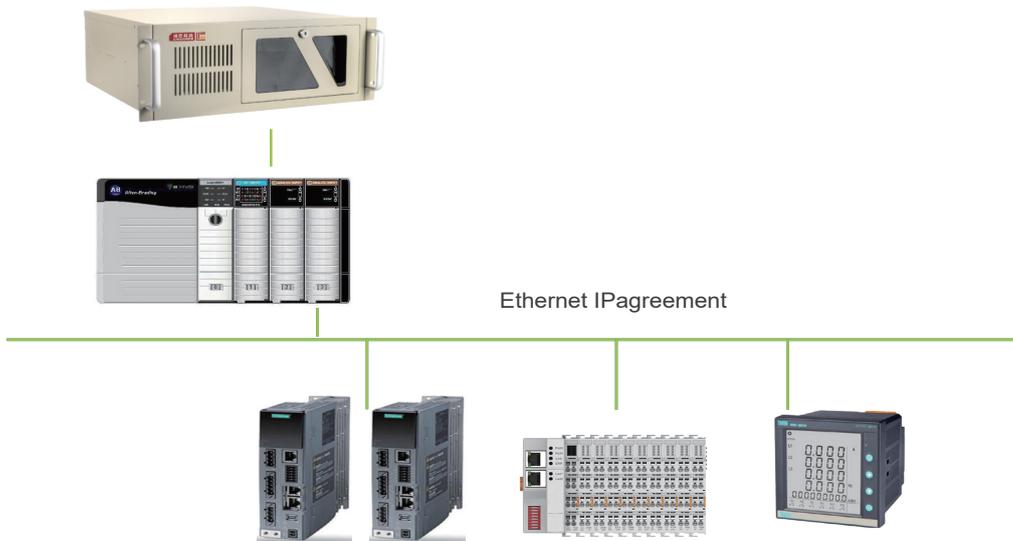
### Product composition



Adapter can support Profinet communication bus.  
 I/O modules can be divided into digital input and output modules, analog input and output modules, and functional modules.  
 It can be matched according to the actual needs of the site.  
 Expandable up to 32 chip modules, excluding power module.

Power supply parameter	
LC1105 System power input	24V(18~36V)
LC1105 system side provides current	2A
Power input to the I/O port	24V(±20%)
Current output of the I/O port	5A(Max.)
Technical parameter	
Expand the number of I/O modules	32piece
Monitoring type	Alarm warning Submodule disconnection alarm

### Example of the Ethernet IP network topology



## LC series IO selection

### Protocol Coupler

Model	Specification
LC1100	Ether-CAT Protocol Coupler
LC1101	Profinet Protocol Coupler
LC1105	Ethernet/IP Protocol Coupler
LC1200	Modbus-TCP Protocol Coupler

### Digital Module

Model	Specification
LC1488	8-channel digital input, NPN
LC1408	8-channel digital input, PNP
LC1486	16-channel digital input, NPN
LC1406	16-channel digital input, PNP
LC2488	8-channel digital output, NPN
LC2408	8-channel digital output, PNP
LC2486	16-channel digital input, NPN
LC2406	16-channel digital input, PNP
LC1188	8-channel input 8-channel output, NPN
LC1088	8-channel input 8-channel output, PNP

# EtherCAT IO Module

## Analog Input Module

Model	Specification
LC3134	4-channel analog input voltage mode $\pm 10V$ , 16bit
LC3114	4-channel analog input current mode 0-20mA, 16bit
LC3004	4-channel analog input current mode $\pm 10V$ , 16bit
LC3014	4-channel analog input current mode 0-10V, 16bit
LC3024	4-channel analog input current mode 0-20mA, 16bit
LC3034	4-channel analog input current mode 4-20mA, 16bit
LC3044	4-channel analog input current mode $\pm 10V/0-10V$ , 16bit
LC3054	4-channel analog input current mode 0-20mA/4-20mA, 16bit
LC3048	8-channel analog input current mode $\pm 10V/0-10V$ , 16bit
LC3058	8-channel analog input current mode 0-20mA/4-20mA, 16bit
LC3162	2-channel pressure sensor, 16bit

## Temperature Acquisition Analog Input Module

Model	Specification
LC3184	4-channel thermocouple 16bit
LC3188	8-channel thermocouple 16bit
LC3172	2-channel Thermal resistance 16bit
LC3174	4-channel Thermal resistance 16bit

# EtherCAT IO Module

## Analog output module

Model	Specification
LC4114	4-channel analog output current mode 0-20mA, 16bit
LC4124	4-channel analog output current mode 4-20mA, 16bit
LC4134	4-channel analog output voltage mode $\pm 10V$ , 16bit
LC4144	4-channel analog output voltage mode $\pm 10V/0-10V$ , 16bit
LC4044	4-channel analog output voltage mode $\pm 10V/0-10V$ , 16bit
LC4054	4-channel analog output current mode 0-20mA/4-20mA, 16bit
LC4048	8-channel analog output voltage mode $\pm 10V/0-10V$ , 16bit
LC4058	8-channel analog output current mode 0-20mA/4-20mA, 16bit

## Encoder, Pulse Module

Model	Specification
LC5001	1 channel count input, incremental encoder, 5V
LC5011	1 channel count input, incremental encoder, 24V
LC5002	2 channel count input, incremental encoder or pulse direction, 5V
LC5012	2 channel count input, incremental encoder or pulse direction, 24V
LC5111	1 channel position comparison trigger, incremental encoder input, 422 level trigger output, 5V
LC5602	2 channel pulse output, support driver point, positioning function, support PWM output

## Communication module

Model	Specification
LC6001	The 1-channel 485/232/422 communication module supports FreeRun and Modbus RTU modes
LC6104	4-channel IO-LINK communication module, supporting MASTER mode

# EtherCAT IO Module

## Protocol Coupler

Model	Specification
LD1100	Ether-CAT Protocol Coupler
LD1101	Profinet Protocol Coupler

## Analog Input Module

Model	Specification
LD1486	16-channel digital input, NPN
LD1406	16-channel digital input, NPN
LD2486	16-channel digital input, NPN
LD2406	16-channel digital input, NPN

## Analog Input Module

Model	Specification
LD3138	8-channel voltage input module, -10V~+10V(16BIT)
LD3134	4-channel voltage input module, -10V~+10V(16BIT)
LD3034	4-channel voltage input module, 4mA~+20mA(16BIT)
LD3038	8-channel voltage input module, 4mA~+20mA(16BIT)
LD4134	4-channel voltage output module -10V~+10V(16BIT)
LD4034	4-channel current output module, 4mA~+20mA(16BIT)



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